

San Francisco Bay Area Toll Bridge Seismic Retrofit and Regional Measure 1 Programs

Project Progress and Financial Update September 2010



**TOLL BRIDGE PROGRAM
OVERSIGHT COMMITTEE**

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Released: October 2010



Aerial View of the San Francisco-Oakland Bay Bridge and the Shear-Leg Crane Barge Erecting the Last Section of the Westbound Temporary Support Structure Truss



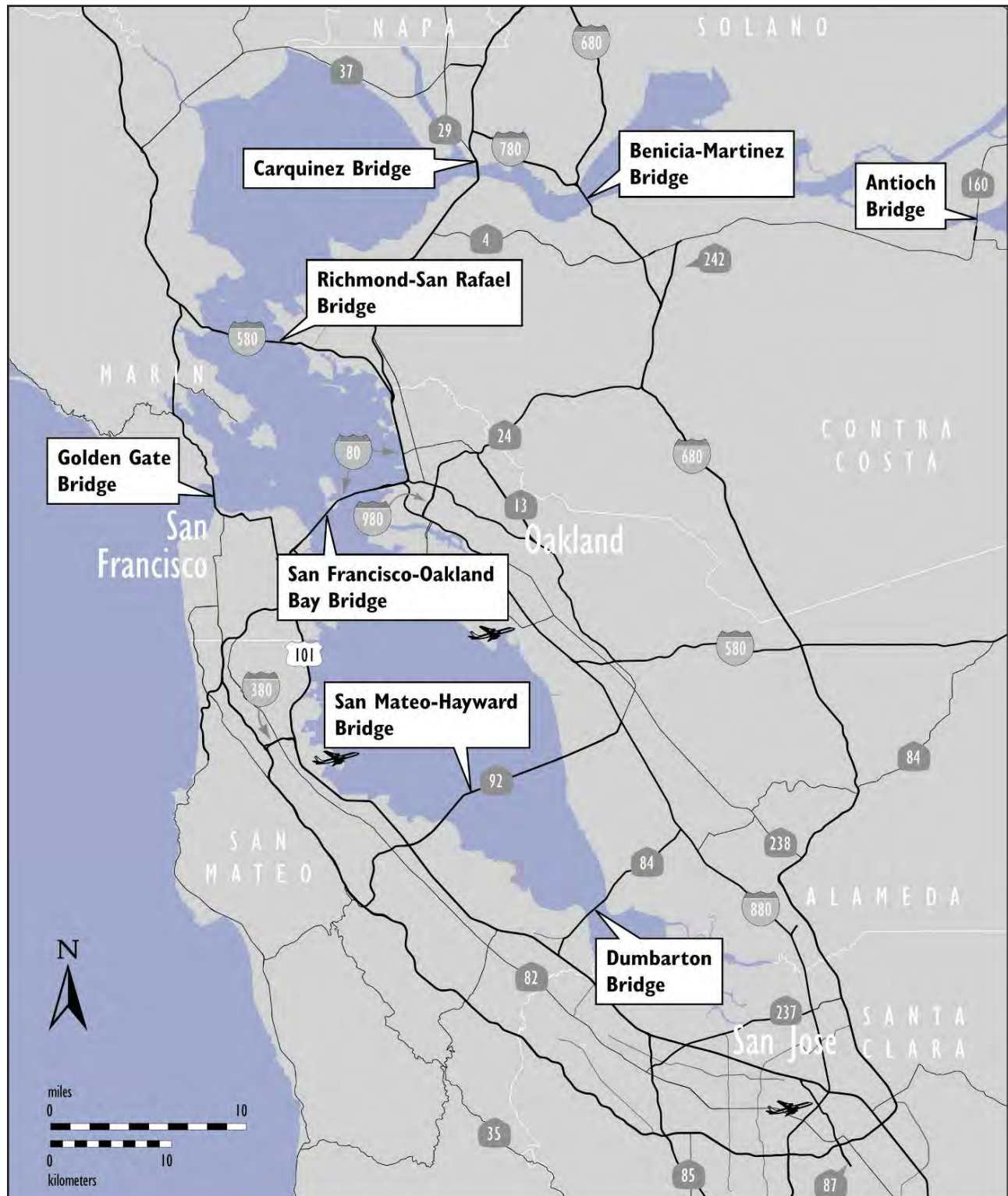


SAS Roadway Boxes 1 through 8
Eastbound and Tower Lift 1

Table of Contents

Introduction	1
Summary Of Major Project Highlights, Issues, And Actions	2
Toll Bridge Seismic Retrofit Program Cost Summary	6
Toll Bridge Seismic Retrofit Program Schedule Summary	7
Regional Measure 1 Program Cost Summary	8
Regional Measure 1 Program Schedule Summary	9
Toll Bridge Seismic Retrofit Program (TBSRP)	11
San Francisco-Oakland Bay Bridge Seismic Retrofit Strategy	12
San Francisco-Oakland Bay Bridge East Span Replacement Project Summary	14
Yerba Buena Island Transitions Structures	16
Self-Anchored Suspension (SAS) Bridge	18
SAS Construction Sequence	20
SAS Superstructure Fabrication Activities	22
SAS Superstructure Field Activities	25
SAS Superstructure Roadway and Tower Box Installation Activities	26
Skyway	28
Oakland Touchdown (OTD)	29
Other Contracts	30
Seismic Retrofit Of The Dumbarton and Antioch Bridges	32
Antioch Bridge Seismic Retrofit Project	32
Dumbarton Bridge Seismic Retrofit Project	34
Other Completed TBSRP Projects	36
Regional Measure 1 Toll Bridge Program	39
Interstate 880/State Route 92 Interchange Reconstruction Project	40
Other Completed RM1 Projects	42
Appendices	45

Map of Bay Area Toll Bridges



* The Golden Gate Bridge is owned and operated by the Golden Gate Bridge, Highway, and Transportation District.

Introduction

In July 2005, Assembly Bill (AB) 144 (Hancock) created the Toll Bridge Program Oversight Committee (TBPOC) to implement a project oversight and project control process for the Benicia-Martinez Bridge and State Toll Bridge Seismic Retrofit Program projects. The TBPOC consists of the Caltrans Director, the Bay Area Toll Authority (BATA) Executive Director and the Executive Director of the California Transportation Commission (CTC). The TBPOC's project oversight and control processes include, but are not limited to, reviewing bid specifications and documents, providing field staff to review ongoing costs, reviewing and approving significant change orders and claims in excess of \$1 million (as defined by the Committee) and preparing project reports. AB 144 identified the Toll Bridge Seismic Retrofit Program (TBSRP) and the new Benicia-Martinez Bridge Project as being under the direct oversight of the TBPOC. In January 2010, Assembly Bill (AB) 1175 (Torlakson) amended the TBSRP to include the Antioch and Dumbarton seismic retrofit projects. The current Toll Bridge Seismic Retrofit Program is as follows:

Toll Bridge Seismic Retrofit Projects	Seismic Safety Status
Dumbarton Bridge Seismic Retrofit	Construction
Antioch Bridge Seismic Retrofit	Construction
San Francisco-Oakland Bay Bridge East Span Replacement	Construction
San Francisco-Oakland Bay Bridge West Approach Replacement	Complete
San Francisco-Oakland Bay Bridge West Span Seismic Retrofit	Complete
San Mateo-Hayward Bridge Seismic Retrofit	Complete
Richmond-San Rafael Bridge Seismic Retrofit	Complete
1958 Carquinez Bridge Seismic Retrofit	Complete
1962 Benicia-Martinez Bridge Seismic Retrofit	Complete
San Diego-Coronado Bridge Seismic Retrofit	Complete
Vincent Thomas Bridge Seismic Retrofit	Complete

The New Benicia-Martinez Bridge is part of a larger program of toll-funded projects called the Regional Measure 1 (RM1) Toll Bridge Program under the responsibility of BATA and Caltrans. While the rest of the projects in the RM1 program are not directly under the responsibility of the TBPOC, BATA and Caltrans will continue to report on their progress as an informational item. The RM1 program includes:

Regional Measure 1 Projects	Open to Traffic Status
Interstate 880/State Route 92 Interchange Reconstruction	Construction
1962 Benicia-Martinez Bridge Reconstruction	Open
New Benicia-Martinez Bridge	Open
Richmond-San Rafael Bridge Deck Overlay Rehabilitation	Open
Richmond-San Rafael Bridge Trestle, Fender & Deck Joint Rehabilitation	Open
Westbound Carquinez Bridge Replacement	Open
San Mateo-Hayward Bridge Widening	Open
State Route 84 Bayfront Expressway Widening	Open
Richmond Parkway	Open

SUMMARY OF MAJOR PROJECT HIGHLIGHTS, ISSUES, AND ACTIONS



Aerial View of the Shear-Leg Crane Barge Erecting the Last Section of the Westbound Temporary Support Structure Truss



SAS Painting of Roadway Box 9 East



SAS Roadway Box 8 on Barge

Toll Bridge Seismic Retrofit Program Risk Management

A major element of the 2005 AB144, the law creating the TBPOC, was legislative direction to implement a more aggressive risk management program. Such a program has been implemented in stages over time to ensure development of a robust and comprehensive approach to risk management. A milestone has been reached in the risk management program with all elements now fully incorporated, resulting in one of the most detailed and comprehensive risk management programs in the country today.

A comprehensive risk assessment is performed for each project in the program. Based upon those assessments, a forecast is developed using the average cost of risk. These forecasts can both increase and decrease as risks are identified, resolved or retired. Nonetheless, assurances have been made that the public is informed of the risks that have been identified and the possible expense they could necessitate.

As of the end of the second quarter of 2010, the 50 percent probable draw on Program Contingency is \$367 million. The potential draw ranges from about \$200 million to \$550 million. Program Contingency decreased by \$240 million in the second quarter of 2010. The majority of the reduction can be explained by the removal of \$137 million from the Antioch Bridge budget, transfer of \$203 million to the East Span COS budget, both of which were partially offset by a decrease in the Dumbarton Bridge cost estimate.

The current Program Contingency balance is sufficient to cover the cost of currently identified risks. Risk mitigation actions are continuously developed and implemented to reduce the potential draw on the Program Contingency.

San Francisco-Oakland Bay Bridge (SFOBB) East Span Seismic Replacement Project SAS Superstructure Contract

The prime contractor constructing the Self-Anchored Suspension (SAS) Bridge from the completed Skyway to Yerba Buena Island is a joint venture of American Bridge/Fluor (ABF). Significant progress is being made both in the Bay Area and around the world. The first 16 of 28 steel roadway boxes have arrived and all 15 will have been lifted into place by the



San Francisco-Oakland Bay Bridge Detour Structure Completed over the Labor Day Weekend 2009

end of September 2010. The first shipment of tower lift shafts have been placed into position on top of the tower foundation. The two steel roadway boxes 9 east and westbound and tower lift 2 shafts will be shipped on September 18, 2010 and are expected to arrive at Pier 7 in Oakland on October 10, 2010.

These boxes, fabricated in Shanghai, China, join other bridge components that have been arriving from around the country and the world. All bridge components undergo a rigorous quality review by the fabricator, ABF, and Caltrans to ensure that only bridge components that have been built in accordance to the specifications will be shipped. Shipments of roadway and tower boxes will continue throughout the year.

The completion of the last roadway sections at the east end of the new span are on the critical path and the east end fabrication has been delayed due to the complexity of the work. The TBPOC is currently in the process of negotiating with the contractor to address these challenges, mitigate delays, and to accelerate the remaining work with a goal of opening the bridge to traffic by 2013. One option being discussed is a “seismic safety opening” of the bridge to traffic before non-essential systems are completed, like architectural lighting or removal of unneeded temporary support structures.

On September 2, 2010, the Toll Bridge Program Oversight Committee (TBPOC), (Caltrans, CTC, and BATA) will review the budget for the San Francisco-Oakland Bay Bridge (SFOBB) Self Anchored Suspension Span (SAS) contract to facilitate the payment of a Contract Change Order (CCO) between Caltrans and American Bridge/Flour. The CCO is intended to resolve the delays on the East End anchorage boxes (OBG) and to provide incentives and disincentives for project

acceleration to meet milestones for delivery of critical roadway segments and seismic safety opening of the new east span by the end of 2013. Execution of the CCO will require the Bay Area Toll Authority to take a budget revision and a revised fund allocation action on September 22, 2010 to fund the proposed action.

The TBPOC will be requested to amend the budget for the SAS contract to equal the \$2.0 billion 2nd Quarter 2010 forecast which is an increase of \$293 million. This action will not require any change to the overall Toll Bridge Seismic Retrofit Program budget because there are adequate program contingency funds available to cover this budget change for the SAS contract.

Yerba Buena Island Detour Contract

The Yerba Buena Island Detour contractor, C.C. Myers, has rolled out the existing bridge span and rolled in the new east tie-in span of the detour structure that diverts traffic off the existing bridge to the detour structure that now ties into the Yerba Buena Island Tunnel. The traffic switch occurred as scheduled on Labor Day weekend. Work is completed on the demolition of the old approach span and construction continues on a number of accelerated foundations for the future transition structures from the Self-Anchored Suspension (SAS) bridge to the tunnel. Upon completion of future accelerated transition structure columns, the area will be turned over to the Yerba Buena Island Transition Structures (YBITS) #1 contractor that will construct the new approach structures.

Yerba Buena Island Transition Structures #1 Contract

The YBITS#1 contract has been awarded to MCM Construction, the same contractor that completed the Oakland Touchdown (OTD) #1 contract. Construction will not start until the demolition of the existing approach and YBITS advanced columns have been completed. MCM mobilized and began delivering equipment and material to start construction in September 2010.

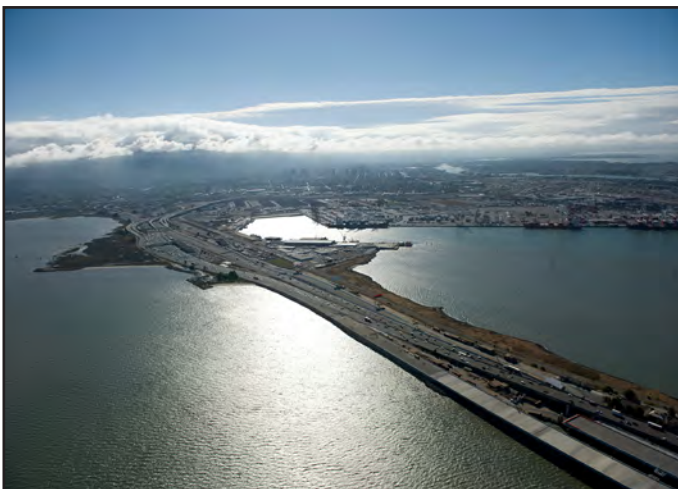
SUMMARY OF MAJOR PROJECT HIGHLIGHTS, ISSUES, AND ACTIONS



Oakland Touchdown Bike Path and Hand Railing



Oakland Touchdown Service Platforms Installed



Aerial View of Oakland Touchdown Looking East

Oakland Touchdown #1 Contract

The Oakland Touchdown (OTD) #1 contractor, MCM Construction completed the work on June 8, 2010. The contract constructed the westbound approach from the toll plaza to the Skyway structure and the portion of the eastbound approach that is not in conflict with the existing bridge structure. Discussions are underway to expedite the bridge opening by constructing a detour and portions of OTD #2.

TBSRP Capital Outlay Support

Based on initial discussions with the contractors, early completion of the East Span Project was believed to be possible and sufficient to mitigate potential identified support cost increases. The support cost increases are primarily due to the need to re-advertise the SAS contract, and to increase opportunities for early completion of the East Span Project. These decisions include a 12-month schedule extension provided during bid time to attract the maximum number of bidders for the SAS contract, and an extension of the YBI Detour contract to advance future foundation and column work of the transition structure and west end deck reconstruction. Since early completion and the intended cost savings are deemed to be unlikely, action was taken to transfer program contingency funds to cover the costs by the end of the second quarter of 2010. Opportunities to economize and reduce costs in this area will continue to be pursued.

TBSRP Programmatic Risks

This category includes risks that are not yet scoped within existing contracts and/or that spread across multiple contracts. The interdependencies between all of the contracts in the program result in the potential for one contract's delay to impact the entire program that are accounted for in the net programmatic risks.

Dumbarton Bridge Seismic Retrofit

When first conceived, the Toll Bridge Seismic Retrofit Program only identified seven of the nine state owned toll bridges to be in need of seismic retrofit, which excluded the Dumbarton and Antioch Bridges. Further seismic vulnerability studies on those structures completed by Caltrans and BATA determined that they were in need of retrofit based on current seismic



Dumbarton Bridge

standards. On June 15, 2010, Caltrans opened seven bids for the Dumbarton Bridge Seismic Retrofit Project. The Dumbarton Retrofit Project had an engineer's estimate of \$73 million, which included supplemental work and contract contingencies, and included a maximum construction duration of 810 working days. The low bidder, Shimmick Construction Company, Inc. was substantially less at \$46.6 million. Given the low bid and the current estimated support costs and project contingencies, on September 2, 2010, the TBPOC will be requested to to amend the project budget to \$267 million, which is \$216 million below the original estimate.



Antioch Bridge

Antioch Bridge Seismic Retrofit

Bids for the Antioch Bridge Retrofit Contract were opened on March 10, 2010. The contract was awarded to California Engineering Contractors, Inc. on April 22, 2010. The awarded contract was significantly less than the engineer's estimate for the work and has resulted in a significant cost forecast reduction. The original budget for the project was \$267 million. Because of the low bid, the TBPOC is forecasting a need for only \$98 million to complete the project. The retrofit is forecast to be completed by May 2012.



92/880 NWCONN Bridge Construction in Progress

Regional Measure 1 Toll Bridge Program (RM1)

Interstate 880/State Route 92 Interchange Reconstruction Project

On this Interchange Reconstruction Project, the new eastbound State Route 92 to northbound Interstate 880 direct connector structure (ENCONN) was completed and opened to detour traffic on May 16, 2009, while the southern half of the new separation structure was opened in April 2010 to detour traffic. Work is now ongoing on the remaining northern half of the separation structure. The project is forecast to be substantially completed in September 2011, pending weather or unforeseen construction delays.

Toll Bridge Seismic Retrofit Program Cost Summary

	Contract Status	AB 144/SB 66 Budget (July 2005)	TBPOC Approved Changes	Current TBPOC Approved Budget (August 2010)	Cost to Date (June 2010) ¹	Current Cost Forecast (August 2010)	Cost Variance	Cost Status
		a	b	c = a + b	d	e	f = e - c	
SFOBB East Span Seismic Replacement								
Capital Outlay Construction								
Skyway	Completed	1,293.0	(38.9)	1,254.1	1,236.9	1,254.1	-	●
SAS Marine Foundations	Completed	313.5	(32.6)	280.9	274.8	280.9	-	●
SAS Superstructure	Construction	1,753.7	-	1,753.7	1,054.0	2,046.8	293.1	●
YBI Detour	Construction	131.9	360.9	492.8	452.8	489.4	(3.4)	●
YBI Transition Structures (YBITS)		299.3	(93.0)	206.3	12.3	238.4	32.1	●
YBITS 1	Construction			144.0	12.3	164.3	20.3	●
YBITS 2	Design			59.0	-	70.8	11.8	●
YBITS Landscaping	Design			3.3	-	3.3	-	●
Oakland Touchdown (OTD)		283.8	4.2	288.0	208.7	282.1	(5.9)	●
OTD 1	Completed			212.0	200.8	208.9	(3.1)	●
OTD 2	Design			62.0	-	59.2	(2.8)	●
OTD Electrical Systems	Design			4.4	-	4.4	-	●
Submerged Electric Cable	Completed			9.6	7.9	9.6	-	●
Existing Bridge Demolition	Design	239.2	(0.1)	239.1	-	233.0	(6.1)	●
Stormwater Treatment Measures	Completed	15.0	3.3	18.3	16.7	18.3	-	●
Other Completed Contracts	Completed	90.4	-	90.4	89.8	90.4	-	●
Capital Outlay Support		959.3	203.0	1,162.3	858.0	1,272.2	109.9	●
Right-of-Way and Environmental Mitigation		72.4	-	72.4	51.3	72.4	-	●
Other Budgeted Capital		35.1	(3.3)	31.8	0.7	7.7	(24.1)	●
Total SFOBB East Span Replacement		5,486.6	403.5	5,890.1	4,256.0	6,285.7	395.6	
Antioch Bridge Seismic Retrofit								
Capital Outlay Construction and Mitigation	Construction		70.0	70.0	-	62.5	(7.5)	●
Capital Outlay Support			31.0	31.0	15.8	35.5	4.5	●
Total Antioch Bridge Seismic Retrofit		-	101.0	101.0	15.8	98.0	(3.0)	
Dumbarton Bridge Seismic Retrofit								
Capital Outlay Construction and Mitigation	Awarded		270.0	270.0	0.3	92.7	(177.3)	●
Capital Outlay Support			95.0	95.0	21.9	56.0	(39.0)	●
Total Dumbarton Bridge Seismic Retrofit		-	365.0	365.0	22.2	148.7	(216.3)	
Other Program Projects		2,268.4	(64.6)	2,203.8	2,158.5	2,191.7	(12.1)	●
Miscellaneous Program Costs		30.0	-	30.0	25.5	30.0	-	●
Net Programmatic Risks ²		-	-	-	-	202.8	202.8	●
Program Contingency		900.0	(191.9)	708.1	-	341.1	(367.0)	●
Total Toll Bridge Seismic Retrofit Program ³		8,685.0	613.0	9,298.0	6,478.0	9,298.0	-	●

● Within approved schedule and budget

● Identified potential project risks that could significantly impact approved schedules and budgets if not mitigated

● Known project impacts with forthcoming changes to approved schedules and budgets

Toll Bridge Seismic Retrofit Program Schedule Summary

	AB144/SB 66 Project Completion Schedule Baseline (July 2005)	TBPOC Approved Changes (Months)	Current TBPOC Approved Completed Schedule (August 2010)	Current Completion Forecast (August 2010)	Schedule Variance (Months)	Schedule Status	Remarks/Notes
	g	h	i = g + h	j	k = j - i	l	
SFOBB East Span Seismic Replacement							
Contract Completion							
Skyway	Apr 2007	8	Dec 2007	Dec 2007	-	●	See Page 28
SAS Marine Foundations	Jun 2008	(5)	Jan 2008	Jan 2008	-	●	See Page 18
SAS Superstructure	Mar 2012	12	Mar 2013	Oct 2013	7	●	See Page 19
YBI Detour	Jul 2007	41	Dec 2010	Dec 2010	-	●	See Page 15
YBI Transition Structures (YBITS)	Nov 2013	12	Nov 2014	Mar 2015	4		See Page 16
YBITS 1			Sep 2013	Dec 2013	3	●	
YBITS 2			Nov 2014	Mar 2015	4	●	
YBITS Landscaping			TBD	TBD	-	●	
Oakland Touchdown	Nov 2013	12	Nov 2014	Mar 2015	4		See Page 29
OTD 1			Jun 2010	June 2010	-	●	
OTD 2			Nov 2014	Mar 2015	4	●	
OTD Electrical Systems			TBD	TBD	-	●	
Submerged Electric Cable			Jan 2008	Jan 2008	-	●	
Existing Bridge Demolition	Sep 2014	12	Sep 2015	Dec 2015	3	●	
Stormwater Treatment Measures	Mar 2008	-	Mar 2008	Mar 2008	-	●	
SFOBB East Span Bridge Opening and Other Milestones							
OTD Westbound Access			Aug 2009	Aug 2009	-	●	
YBI Detour Open			Sep 2009	Sep 2009	-	●	See Page 15
Westbound Open	Sep 2011	12	Sep 2012	April 2013	7	●	
Eastbound Open	Sep 2012	12	Sep 2013	Dec 2013	3	●	
Antioch Bridge Seismic Retrofit							
Contract Completion			Aug 2012	May 2012	(3)	●	See Page 32
Dumbarton Bridge Seismic Retrofit							
Contract Completion			Sep 2013	Sep 2013	-	●	See Page 34

¹ Due to the delays in implementation of a new Caltrans accounting system, cost data is only available through June 30, 2010.

² The Net Programmatic Risks of \$202.8 million comprises \$195.8 million program level risks and \$7 million risk reconciliation.

³ Figures may not sum up to totals due to rounding effects.

Regional Measure 1 Program Cost Summary

	Contract Status	BATA Baseline Budget (July 2005)	BATA Approved Changes	Current BATA Approved Budget (August 2010)	Cost to Date (June 2010) ¹	Current Cost Forecast (August 2010)	Cost Variance	Cost Status
		a	b	c = a + b	d	e	f = e - c	
Interstate 880/Route 92 Interchange Reconstruction								
Capital Outlay Construction	Construction	94.8	66.2	161.0	100.3	161.0	-	●
Capital Outlay Support		28.8	34.6	63.4	54.1	63.4	-	●
Capital Outlay Right-of-Way		9.9	7.0	16.9	12.3	16.9	-	●
Project Reserve		0.3	3.4	3.7	-	3.7	-	
Total I-880/SR-92 Interchange Reconstruction		133.8	111.2	245.0	166.7	245.0	-	
Other Completed Program Projects		1,978.8	182.6	2,161.4	2,086.8	2,161.4	-	
Total Regional Measure 1 Toll Bridge Program²		2,112.6	293.8	2,406.4	2,253.5	2,406.4	-	

- Within approved schedule and budget
- Identified potential project risks that could significantly impact approved schedules and budgets if not mitigated
- Known project impacts with forthcoming changes to approved schedules and budgets

Regional Measure 1 Program Schedule Summary

	BATA Baseline Completion Schedule (July 2005)	BATA Approved Changes (Months)	Current BATA Approved Completion Schedule (August 2010)	Current Completion Forecast (August 2010)	Schedule Variance (Months)	Schedule Status	Remarks/Notes
	g	h	i = g + h	j	k = j - i	l	
Interstate 880/Route 92 Interchange Reconstruction							
Contract Completion							
Interchange Reconstruction	Dec 2010	9	Jun 2011	Sep 2011	3	●	See Page 40

¹ Due to the delays in implementation of a new Caltrans accounting system, cost data is only available through June 30, 2010.

² Figures may not sum up to totals due to rounding effects.





Aerial View of the San Francisco-Oakland Bay Bridge East Span Construction Progress Looking toward the West Span and Downtown San Francisco

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge Seismic Retrofit Strategy

When a 250-ton section of the upper deck of the East Span collapsed during the 7.1-magnitude Loma Prieta Earthquake in 1989, it was a wake-up call for the entire Bay Area. While the East Span quickly reopened within a month, critical questions lingered: How could the Bay Bridge—a vital regional lifeline structure—be strengthened to withstand the next major earthquake? Seismic experts from around the world determined that to make each separate element seismically safe on a bridge of this size, the work must be divided into numerous projects. Each project presents unique challenges. Yet there is one common challenge — the need to accommodate the more than 280,000 vehicles that cross the bridge each day.



West Approach Overview

West Approach Seismic Replacement Project

Project Status: Completed 2009

Seismic safety retrofit work on the West Approach in San Francisco—bounded on the west by 5th Street and on the east by the anchorage of the west span at Beale Street—involved completely removing and replacing this one-mile stretch of Interstate 80, as well as six on- and off-ramps within the confines of the West Approach's original footprint. This project was completed on April 8, 2009.

West Span Seismic Retrofit Project

Project Status: Completed 2004

The West Span lies between Yerba Buena Island and San Francisco and is made up of two complete suspension spans connected at a center anchorage. Retrofit work included adding massive amounts of steel and concrete to strengthen the entire West Span, along with new seismic shock absorbers and bracing.



San Francisco-Oakland Bay Bridge West Span



East Span Seismic Replacement Project

Rather than a seismic retrofit, the two-mile long East Span is being completely rebuilt. When completed, the new East Span will consist of several different sections, but will appear as a single streamlined span. The eastbound and westbound lanes of the East Span will no longer include upper and lower decks. The lanes will instead be parallel, providing motorists with expansive views of the bay. These views will also be enjoyed by bicyclists and pedestrians, thanks to a new path on the south side of the bridge that will extend all the way to Yerba Buena Island. The new span will be aligned north of the existing bridge to allow traffic to continue to flow on the existing bridge as crews build the new span.

The new span will feature the world's longest Self-Anchored Suspension (SAS) bridge that will be connected to an elegant roadway supported by piers (Skyway), which will gradually slope down toward the Oakland shoreline (Oakland Touchdown). A new transition structure on Yerba Buena Island (YBI) will connect the SAS to the YBI Tunnel and will transition the East Span's side-by-side traffic to the upper and lower decks of the tunnel and West Span.

When construction of the new East Span is complete and vehicles have been safely rerouted to it, the original East Span will be demolished.



Architectural Rendering of the New East Span of the San Francisco-Oakland Bay Bridge



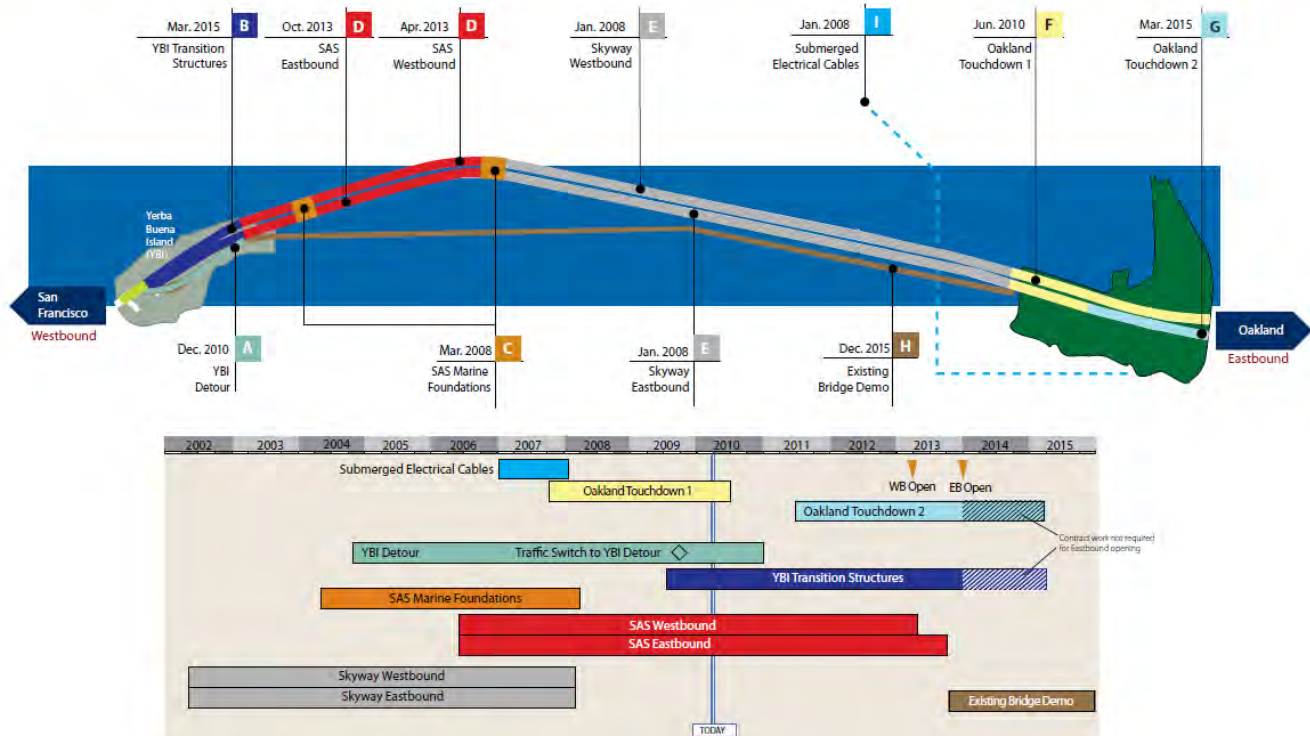
TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Summary

The new East Span bridge can be split into four major components—the Skyway and the Self-Anchored Suspension bridge in the middle and the Yerba Buena Island Transition Structures and Oakland Touchdown approaches at either end. Each component is being constructed by one to three separate contracts that have been sequenced together.

Highlighted below are the major East Span contracts and their schedules. The letter designation before each contract corresponds to contract descriptions in the report.

SFOBB East Span Work Sequence



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Yerba Buena Island Detour (YBID)

As with all of the Bay Bridge's seismic retrofit projects, crews must build the Yerba Buena Island Transition Structures (YBITS) without disrupting traffic. To accomplish this task, YBID eastbound and westbound traffic was shifted off the existing roadway and onto a temporary detour on Labor Day weekend 2009. Drivers will use this detour, just south of the original roadway, until traffic is moved onto the new East Span.

A YBID Contract

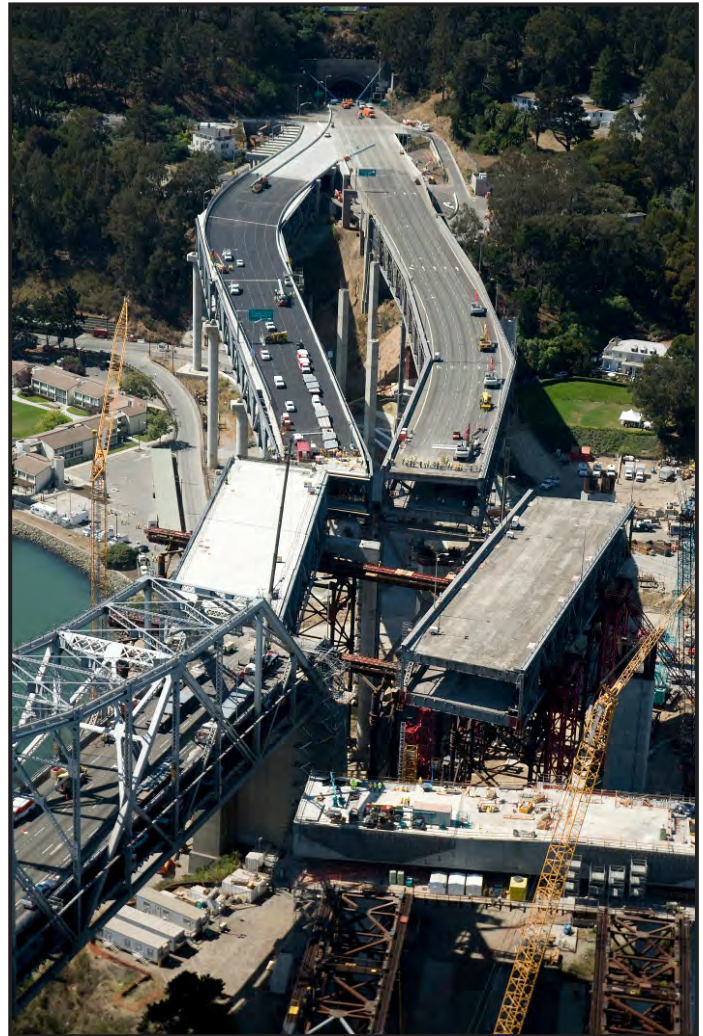
Contractor: C.C. Myers Inc

Approved Capital Outlay Budget: \$492.8 M

Status: 99% Complete as of August 2010

This contract was originally awarded in early 2004 to construct the detour structure for the planned 2006 opening of the new East Span. Due to the re-advertisement of the SAS superstructure contract in 2005 because of a lack of funding at the time, the bridge opening was rescheduled to 2013. To better integrate the contract into the current East Span schedule and to improve seismic safety and mitigate future construction risks, the TBPOC has approved a number of changes to the contract, including adding the deck replacement work near the tunnel that was rolled into place over Labor Day weekend 2007, advancing future transition structure foundation work and making design enhancements to the temporary detour structure. These changes have increased the budget and forecast for the contract to cover the revised project scope and potential project risks.

Status: Work is completed on the demolition of the old approach span and construction continues on a number of accelerated foundations for the future transition structures from the Self-Anchored Suspension (SAS) bridge to the tunnel. Upon removal of the old approach span and completion of future accelerated transition structure columns, the area will be turned over to the Yerba Buena Island Transition Structures (YBITS) #1 contractor that will construct the new approach structures. The YBITS #1 contractor, MCM, has mobilized and is moving in equipment and storing trestle work.



YBI East Tie In Rolled In Labor Day 2009



West Tie-In Phase #1 Rolled in on Labor Day 2007

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Yerba Buena Island Transition Structures (YBITS)

The new Yerba Buena Island Transition Structures (YBITS) will connect the new SAS bridge span to the existing Yerba Buena Island Tunnel, transitioning the new side-by-side roadway decks to the upper and lower decks of the tunnel. The new structures will be cast-in-place reinforced concrete structures that will look very similar to the already constructed Skyway structures. While some YBITS foundations and columns have been advanced by the YBID contract, the remaining work will be completed under three separate YBITS contracts.

B YBITS #1 Contract

Contractor: MCM Construction, Inc.

Approved Capital Outlay Budget: \$144.0 M

Status: 2% Complete as of August 2010



Overview of YBITS Advanced Columns, YBID and SAS W2 Cap Beam

The YBITS #1 contract will construct the mainline roadway structures from the SAS bridge to the YBI tunnel. On December 15, 2009, Caltrans opened three bids for the Yerba Buena Island Transitions Structures (YBITS) #1 contract. On February 4, 2010, Caltrans awarded the YBITS #1 Contract to MCM Construction, Inc. Construction work will start when the YBID contractor has completed demolition of the old viaduct structure and [advanced columns](#). MCM Construction, Inc. is also the firm that constructed the Oakland Touchdown #1 contract.

Status: MCM Construction, Inc. has mobilized and will start construction in September 2010.



Rendering of Overview of Future Yerba Buena Island Transition Structures in Progress (top) with Completed Detour Viaduct (bottom) Completed



YBITS #2 Contract

Contractor: TBD

Approved Capital Outlay Budget: \$59.0 M

Status: **In Design**

The YBITS #2 contract will demolish the detour viaduct after all traffic is shifted to the new bridge and will construct a new eastbound on-ramp to the bridge in its place. The new ramp will also provide the final link for bicycle/pedestrian access off the SAS bridge onto Yerba Buena Island.

YBITS Landscaping Contract

Contractor: TBD

Approved Capital Outlay Budget \$3.3M

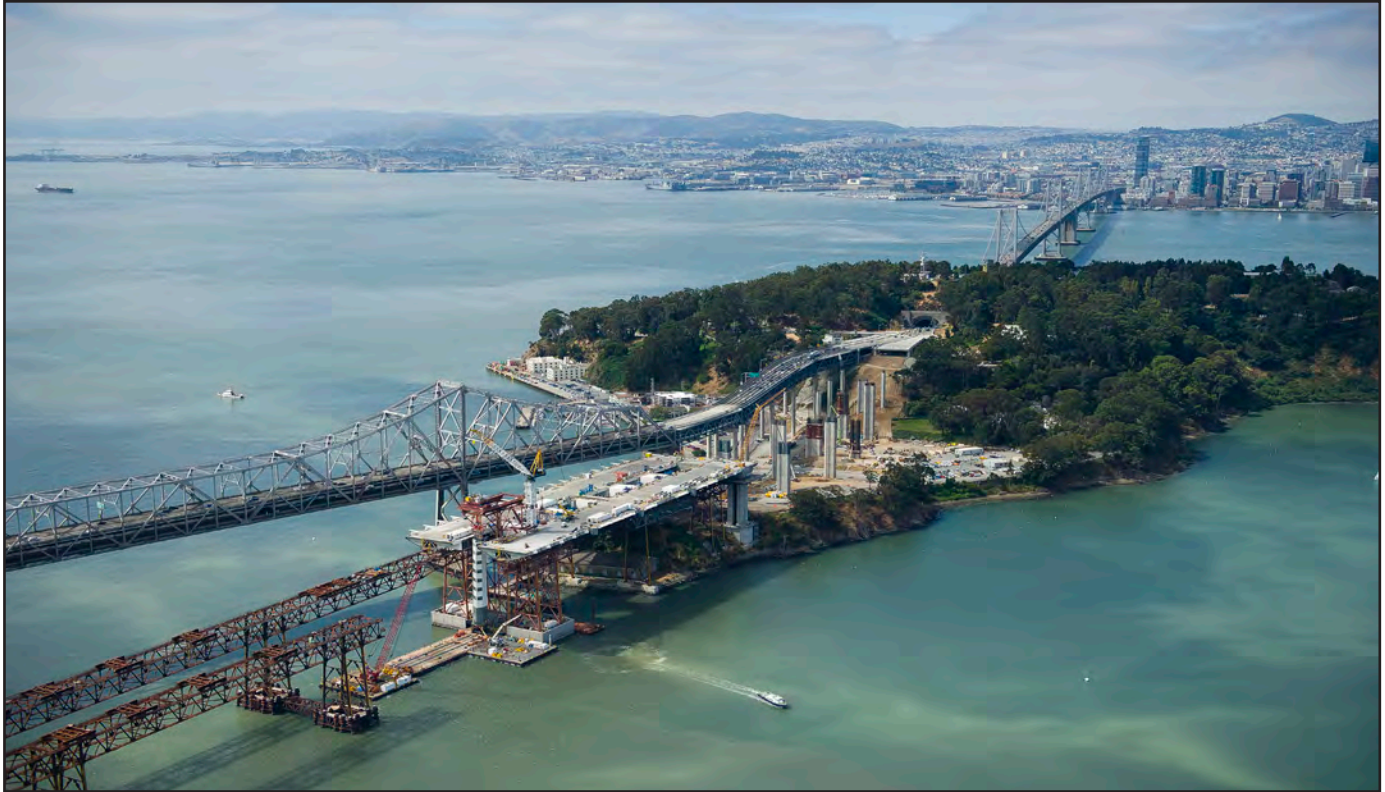
Status: **In Design**

Upon completion of the YBITS work, a follow-on landscaping contract will be executed to re-plant and landscape the area.

Yerba Buena Island Transition Structures Advanced Work

Due to the re-advertisement of the SAS superstructure contract in 2005, it became necessary to temporarily suspend the detour contract and make design changes to the viaduct. To make more effective use of the extended contract duration and to reduce overall project schedule and construction risks, the TBPOC approved the advancement of foundation and column work from the Yerba Buena Island Transition Structures contract.

Status: Work continues to complete the advanced columns for the Yerba Buena Island Transition Structures by the end of September 2010.



Aerial View of Yerba Buena Island Transition Structures Advanced Columns ,YBID and SAS Roadway Boxes

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Self-Anchored Suspension (SAS) Bridge

If one single element bestows world class status on the new Bay Bridge East Span, it is the Self-Anchored Suspension (SAS) bridge. This engineering marvel will be the world's largest SAS span at 2,047 feet in length, as well as the first bridge of its kind built with a single tower.

The SAS was separated into three separate contracts— construction of the land-based foundations and columns at Pier W2; construction of the marine-based foundations and columns at Piers T1 and E2; and construction of the SAS steel superstructure, including the tower, roadway, and cabling. Construction of the foundations at Pier W2 and at Piers T1 and E2 was completed in 2004 and 2007, respectively.



SAS Tower Lift 1 Shafts Being Erected

SAS Land Foundation Contract

Contractor: West Bay Builders, Inc.

Approved Capital Outlay Budget: \$26.4 M

Status: Completed October 2004

The twin W2 columns on Yerba Buena Island provide essential support for the western end of the SAS bridge, where the single main cable for the suspension span will extend down from the tower and wrap around and under the western end of the roadway deck. Each of these huge columns required massive amounts of concrete and steel and are anchored 80 feet into the island's solid bedrock.

C SAS Marine Foundations Contract

Contractor: Kiewit/FCI/Manson, Joint Venture

Approved Capital Outlay Budget: \$280.9 M

Status: Completed January 2008

Construction of the piers at E2 and T1 required significant on-water resources to drive the foundation support piles down, not only to bedrock, but also through the bay water and mud (see rendering on facing page).

The T1 foundation piles extend 196 feet below the waterline and are anchored into bedrock with heavily reinforced concrete rock sockets that are drilled into the rock. Driven nearly 340 feet deep, the steel and concrete E2 foundation piles were driven 100 feet deeper than the deepest timber piles of the existing east span in order to get through the bay mud and reach solid bedrock.



D SAS Superstructure Contract

Contractor: American Bridge/Fluor Enterprises, Joint Venture

Approved Capital Outlay Budget: \$1.75 B

Status: 59% Complete as of August 2010

The SAS bridge is not just another suspension bridge. Rising 525 feet above mean sea level and embedded in rock, the single-tower SAS span is designed to withstand a massive earthquake. Traditional main cable suspension bridges have twin cables with smaller suspender cables connected to them. These cables hold up the roadbed and are anchored to the east end of the roadway boxes. While there will appear to be two main cables on the SAS, there will actually only be one. This single cable will be anchored within the eastern end of the roadway, carried over the tower and then wrapped around the two side-by-side decks at the western end.

The single-steel tower will be made up of four separate legs connected by shear link beams which function much like a fuse in an electrical circuit. These beams will absorb most of the impact from an earthquake, preventing damage to the tower legs.

The next several pages highlight the construction sequence of the SAS and are followed by detailed updates on specific construction activities.



Architectural Rendering of New Self-Anchored Suspension Span and Skyway



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Construction Sequence

STEP 1 - CONSTRUCT TEMPORARY SUPPORT STRUCTURES

Temporary support structures will need to be erected from the Skyway to Yerba Buena Island to support the new SAS bridge during construction.

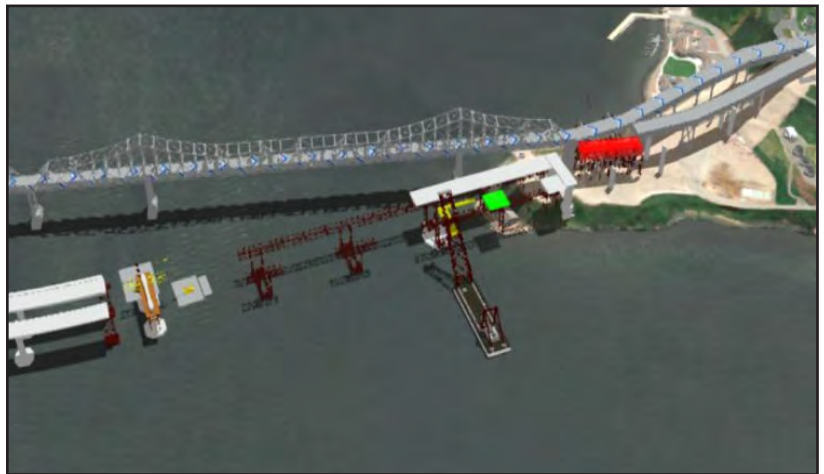
Status: Foundations and temporary support structures will be completed in mid-September 2010 with the last westbound mid-section erection.



STEP 2 - INSTALL ROADWAYS

The roadway boxes are being lifted into place by using the shear-leg crane barge. The boxes are being bolted and welded together atop the temporary support trusses to form two continuous parallel steel roadway boxes.

Status: Westbound roadway box 7 will be erected in September 2010. Seven crossbeams have been erected between the roadway boxes. Roadway boxes 9 east and west will ship on September 18, 2010 and are expected to arrive at Pier 7 in Oakland on October 10, 2010.



STEP 3 - INSTALL TOWER

Each of the four legs of the tower will be erected in five separate lifts. The tower lifts will be installed using a temporary erection tower and lifting jacks.

Status: The first lift tower shafts arrived at Pier 7 in Oakland on July 18, 2010 and erected on August 6, 2010. The second tower lift will ship on September 18, 2010 and is expected to arrive at Pier 7 in Oakland in October 10, 2010.



STEP 4 - MAIN CABLE AND SUSPENDER INSTALLATION

The main cable will be pulled from the east end of the SAS bridge, over the tower, and wrapped around Pier W2 and again back over the tower and to the west end of the SAS bridge deck. Suspender cables will be added to lift the roadway decks off the temporary support structure.

Status: Cable installation is pending the erection of the tower and roadway spans. All cables have been fabricated, shipped and stored in the warehouse at Pier 7 in Oakland.



STEP 5 - WESTBOUND OPENING

The new bridge will first open in the westbound direction pending completion of the Yerba Buena Island Transition Structures.

Status: Westbound opening is forecast for fall 2013. The westbound approach from Oakland to the Skyway was completed by the Oakland Touchdown #1 contract in June 2009.



STEP 6 - EASTBOUND OPENING

Opening of the bridge in the eastbound direction is pending completion of Oakland Touchdown #2. Discussions are underway to expedite the bridge opening by constructing a detour and completing the remaining portion of OTD #2 early.

Status: The eastbound opening is forecast for October 2013.



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Superstructure Fabrication Activities

Roadway and Tower Segments

Like giant three-dimensional jigsaw puzzles, the roadway and tower lifts of the SAS bridge are hollow steel shells that are internally strengthened and stiffened by a highly engineered network of welded steel ribs and diaphragms. The use of steel in this manner allows for a flexible yet relatively light and strong structure able to withstand the massive loads placed on the bridge during seismic events.

On the critical path to completing the bridge are the fabrication of the last four roadway boxes (segments 13 and 14 east and west). Start of fabrication of these boxes has fallen behind schedule due to delays in the fabrication drawing preparation process. These delays will likely preclude the westbound opening of the bridge in 2012, but the push for the opening of the bridge to traffic in both directions in 2013 continues.

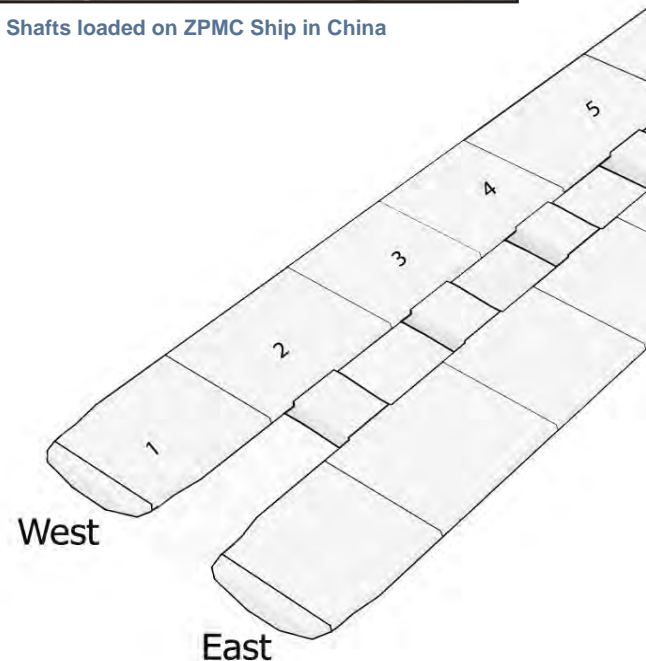
All components undergo a rigorous quality review by ZPMC, ABF, and Caltrans to ensure that only bridge components that have been built according to contract specifications will be shipped.

Roadway Box Fabrication Status: As shown in the diagram to the right, roadway boxes 1 through 8 east and west have been completed and shipped to the Bay Area. Roadway box 9 east and west will be shipped on September 18, 2010 and is expected to arrive at Pier 7 in Oakland in on October 10, 2010. The remaining roadway boxes are still being pieced together into larger segments. Fabrication of sub-assemblies for roadway box 13 and 14 started in late March 2010.

Tower Fabrication Status: Each of the four legs of the towers is composed of five separate lifts. The lifts get progressively shorter and lighter as they progress up the tower. The first four shafts of the first lift of the tower were lifted into place and are being bolted and welded together. Tower lift 2 shafts will be shipped to the job site on September 18, 2010 and is expected to arrive at Pier 7 in Oakland on October 10, 2010. Tower lifts 3 and 4 shafts are in vertical assembly to ensure alignment at the ZPMC assembly yard.

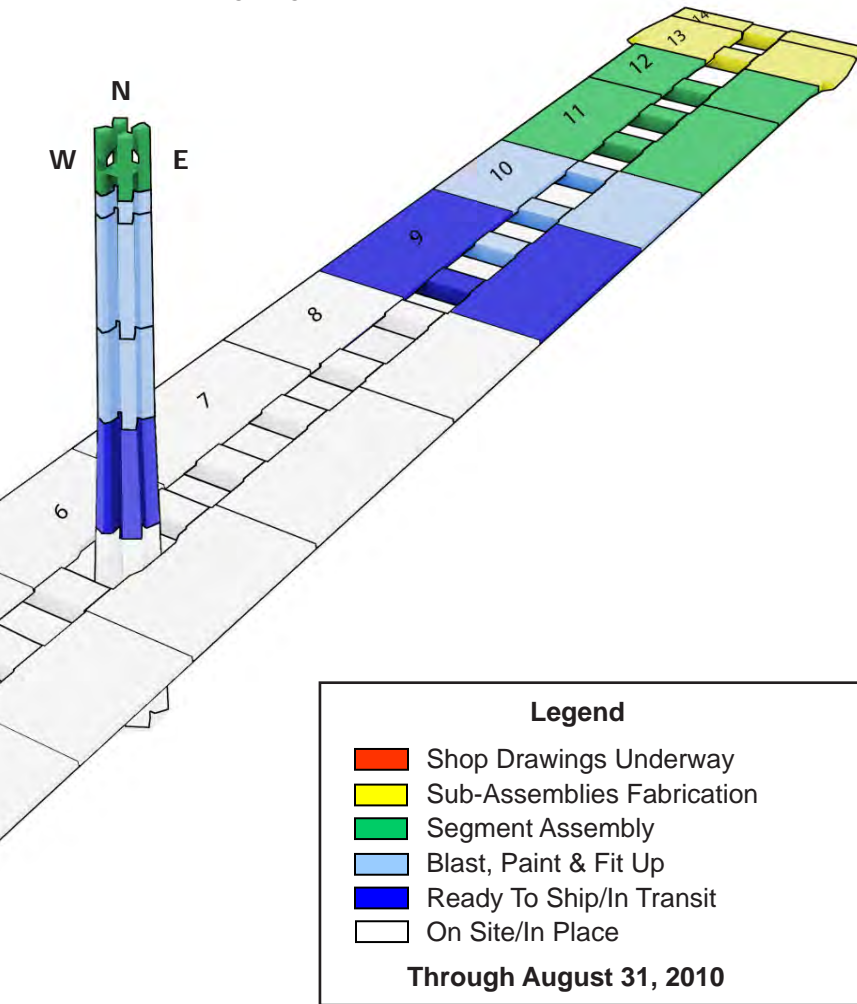


Lift 2 Tower Shafts loaded on ZPMC Ship in China



Fabrication Progress Diagram

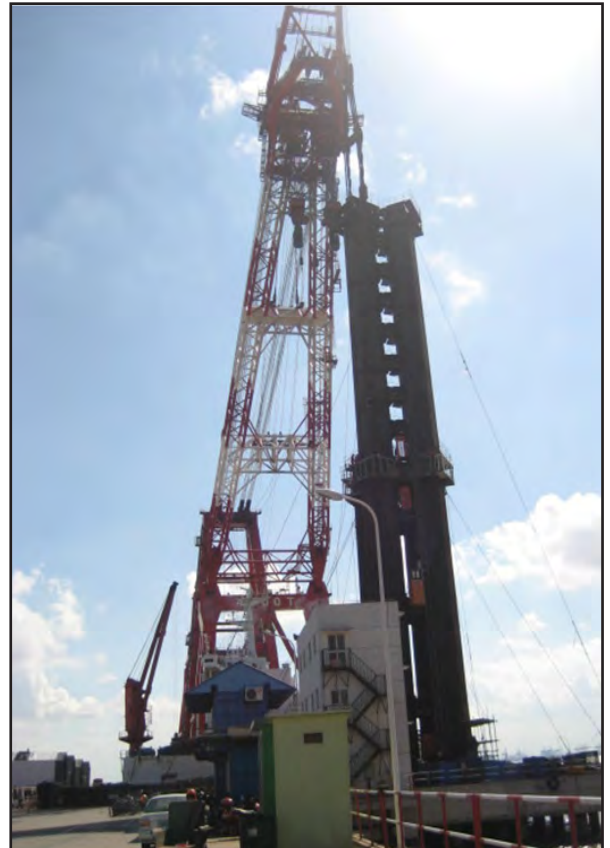
Through August 31, 2010



SAS Roadway Box 10 in Trial Assembly at the ZPMC Assembly Yard



SAS Roadway Box 9 Being Loaded for Shipment at ZPMC



Tower Lift 4 Shafts in Trial Assembly with Lift 3 Shafts at the ZPMC Assembly Yard Trial

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Superstructure Fabrication Activities (cont.)

Cables and Suspenders

One continuous main cable will be used to support the roadway deck of the SAS bridge. Anchored into the eastern end of the bridge, the main cable will be anchored with the roadway box at the east end of the SAS near Pier E1, extend over the main tower at T1, loop around the western end of the roadway decks at Pier W2, and then travel back over the main tower to the western end of the roadway box. The main cable will be made up of bundles of individual wire strands. Supporting the roadway decks to the main cable will be a number of smaller suspender cables. The main cable will be fabricated in China and the suspender cables in Missouri, USA.

Status: All tower cables have been fabricated and delivered to the job site and stored at Pier 7 warehouse in Oakland. Of 204 suspenders, 94 are complete and 34 cable bands have arrived at the job site. Cable band bolts are complete and are ready for final testing in late September 2010.



SAS Wire for Suspender Ropes

Saddles, Bearings, Hinges, and Other Bridge Components

The mounts on which the main cable and suspender ropes will sit are made from solid steel castings. Castings for the main cable saddles are being made by Japan Steel Works, while the cable bands and brackets are being made by Goodwin Steel in the United Kingdom.

The bridge bearings and hinges that support, connect, and transfer loads from the self-anchored suspension (SAS) span to the adjoining sections of the new east span are being fabricated in a number of locations. Work on the bearings is being performed in Pennsylvania, USA and Hochang, South Korea, while hinge pipe beams are being fabricated in Oregon, USA.



SAS East End Diaphragm Connection Fabrication

Status: The cable saddles and hinges at the W2 cap beam and YBITS are under fabrication. The west deviation saddles arrived at Pier 7 in San Francisco on April 15, 2010. All other saddles are completed and are being stored at the job site.



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Self-Anchored Suspension (SAS) Superstructure Field Activities



Shear-Leg Crane Barge Installing the Last Temporary Support Structure Truss



SAS Aerial View of Last Temporary Support Structure Truss Being Erected



SAS E2 Cap Beam and the end of the Skyway

Shear-Leg Crane Barge

The massive shear-leg crane barge that is helping to build the SAS superstructure arrived in the San Francisco Bay on March 12, 2009 after a trans-Pacific voyage.

The crane and barge are separate units operating as a single entity named the “Left Coast Lifter.” The 400-by-100-foot barge is a U.S.-flagged vessel that was custom built in Portland, Oregon by U.S. Barge, LLC and outfitted with the crane by Shanghai Zhenhua Heavy Industry Co. Ltd. (ZPMC) at a facility near Shanghai, China. The crane’s boom weighs 992 tons and is 328 feet long. The crane can lift up to 1,873 tons, including the deck and tower boxes for the SAS.

Status: The shear-leg crane barge arrived at the job site March 2009. The crane has off-loaded and placed all temporary support structures and SAS roadway boxes and crossbeams.

Temporary Support Structures

To erect the roadway decks and tower of the bridge, temporary support structures were first put in place. Almost a bridge in itself, the temporary support structures stretch from the end of the completed Skyway back to Yerba Buena Island. For the tower, a strand jack system is being built into the tower’s temporary frame to elevate the upper sections of the tower into place. These temporary supports are being fabricated in the Bay Area, as well as in Oregon and in China at ZPMC.

Status: The temporary support structures are complete. A mid-section of the westbound truss was erected in mid-September after the SAS roadway boxes 7 and 8 eastbound were lifted into place.

Cap Beams

Construction of the massive steel-reinforced concrete cap beams that link the columns at Piers W2 and E2 was left to the SAS superstructure contractor and represents the only concrete portions of work on that contract. The east and west ends of the SAS roadway will rest on the cap beams and the main cable will wrap around Pier W2, while anchoring into the east end of the SAS deck sections near E2.

Status: Completed March 2009

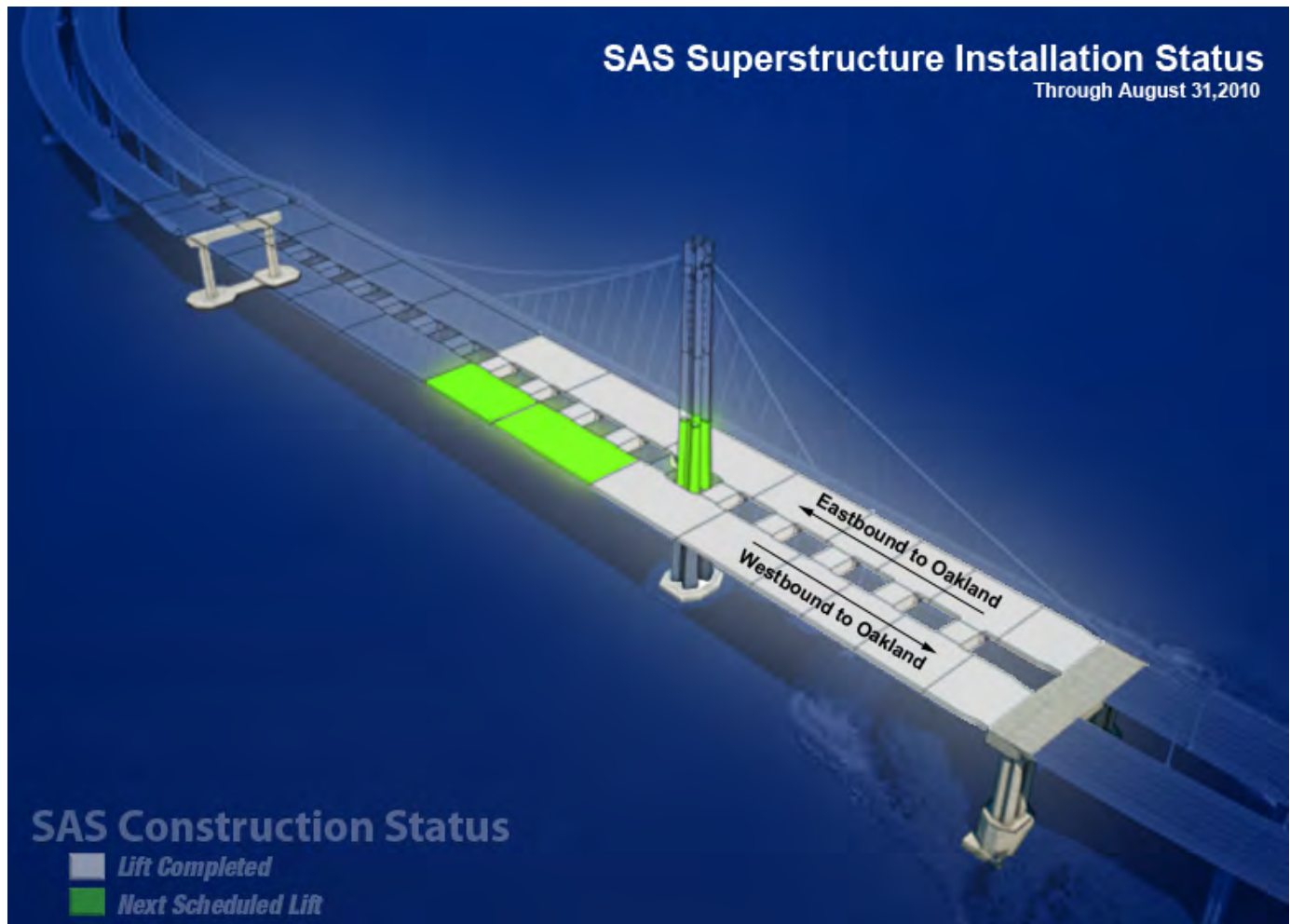
TOLL BRIDGE SEISMIC RETROFIT PROGRAM

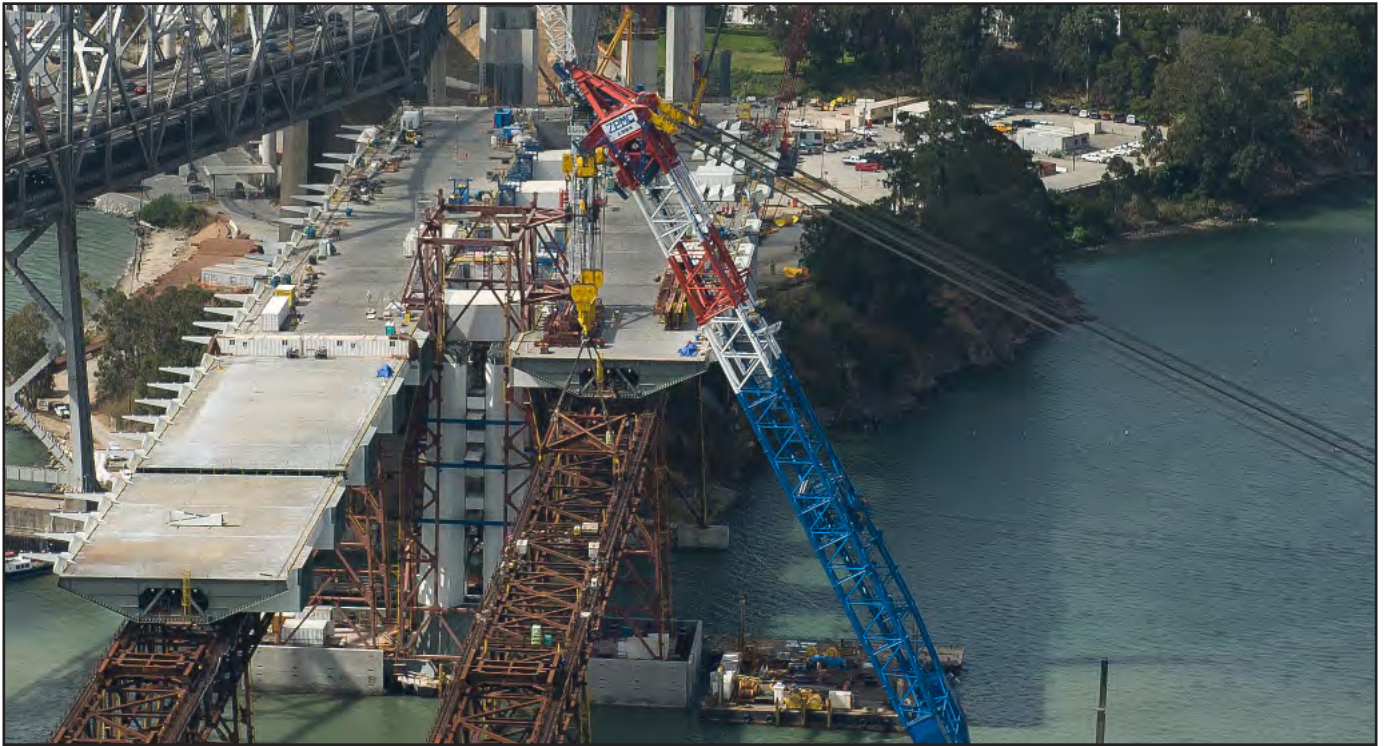
Self-Anchored Suspension (SAS) Superstructure Installation Activities

Upon arrival in Oakland, the steel roadway and tower sections are off-loaded directly from the transport ship onto barges to await installation atop the temporary support structures. Steel roadway boxes will be installed from west to east. Due to the shallow waters near Yerba Buena Island, the eastbound lanes on the south side of the new bridge will be installed first, then to be followed by the westbound lanes. In total, there are 28 roadway boxes (14 in each direction) that range from 560 to 1660 tons and from 80 to 230 feet long.

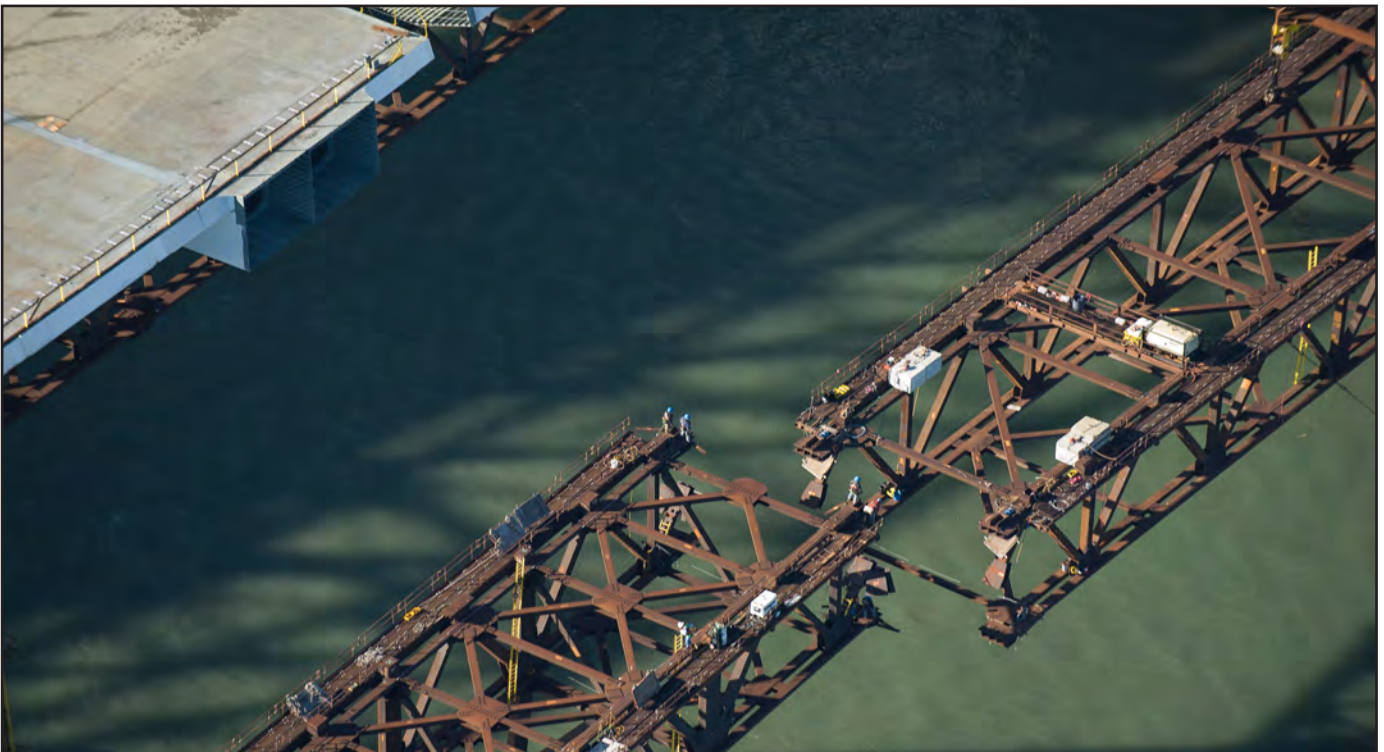
The tower comprises four legs, each made up of four tower lifts that make up the majority of the height of the tower, the tower grillage, and finally the tower head.

Status: Fourteen of 28 roadway boxes (1 through 8 east and west) have been placed on top of temporary support structures and one additional westbound roadway box will be lifted into place in September and another in October to form a continuous roadway. Tower lift 1 shafts have been lifted into place and are being welded and bolted together. Roadway box 9 east and west and tower lift 2 shafts will be shipped on September 18, 2010 and are expected to arrive at Pier 7 in Oakland on October 10, 2010.





Aerial View of the Shear-Leg Crane Barge Erecting the Last Section of the Westbound Temporary Support Structure Truss



Aerial View of the Shear-Leg Crane Barge Erecting the Last Section of the Westbound Temporary Support Structure Truss

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Skyway

The Skyway, which comprises much of the new East Span, will drastically change the appearance of the Bay Bridge. Replacing the gray steel that currently cages drivers, a graceful, elevated roadway supported by piers will provide sweeping views of the bay.

E Skyway Contract

Contractor: Kiewit/FCI/Manson, Joint Venture

Approved Capital Outlay Budget: \$1.25 B

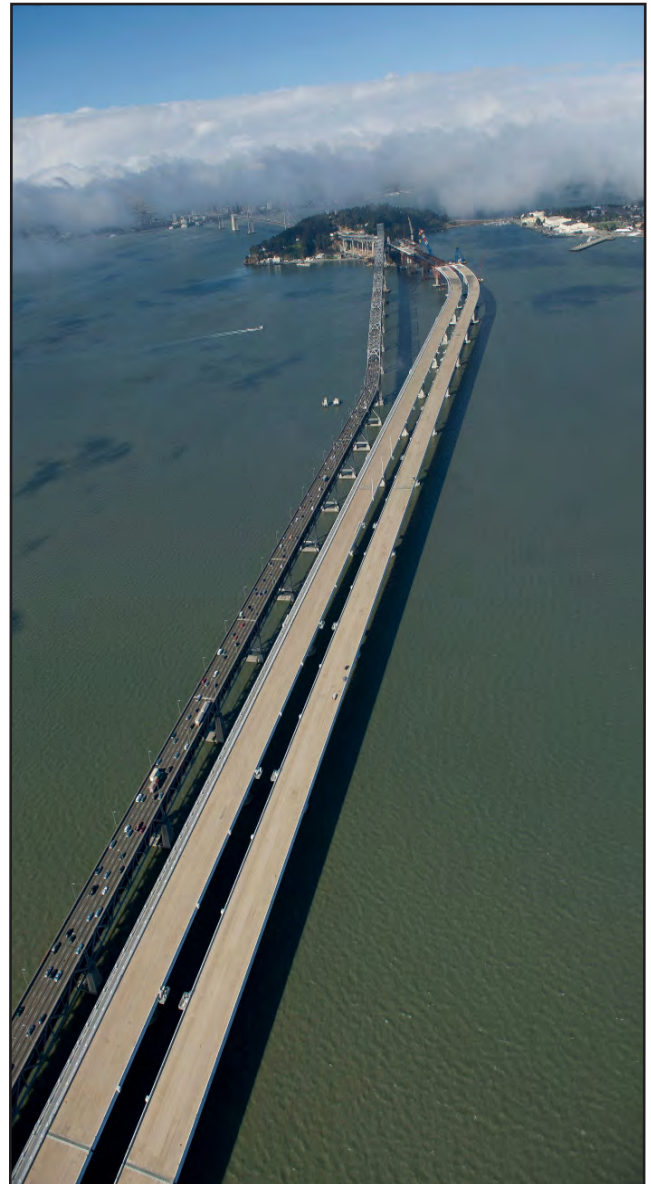
Status: Completed March 2008

Extending for more than a mile across Oakland mudflats, the Skyway is the longest section of the East Span. It sits between the new Self-Anchored Suspension (SAS) span and the Oakland Touchdown. In addition to incorporating the latest seismic-safety technology, the side-by-side roadway decks of the Skyway feature shoulders and lane widths built to modern standards.

The Skyway's decks are composed of 452 pre-cast concrete segments (standing three stories high), containing approximately 200 million pounds of structural steel, 120 million pounds of reinforcing steel, 200 thousand linear feet of piling and about 450 thousand cubic yards of concrete. These are the largest segments of their kind ever cast and were lifted into place by custom-made winches.

The Skyway marine foundation consists of 160 hollow steel pipe piles measuring eight feet in diameter and dispersed among 14 sets of piers. The 365-ton piles were driven more than 300 feet into the deep bay mud. The new East Span piles were battered or driven in at an angle, rather than vertically, to obtain maximum strength and resistance.

Designed specifically to move during a major earthquake, the Skyway features several state-of-the-art seismic safety innovations, including 60-foot-long hinge pipe beams. These beams will allow deck segments on the Skyway to move, enabling the deck to withstand greater motion and to absorb more earthquake energy.



Overview of the Skyway Looking West Toward Yerba Buena Island



TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Oakland Touchdown

When completed, the Oakland Touchdown (OTD) structures will connect Interstate 80 in Oakland to the new side-by-side decks of the new East Span. For westbound drivers, the OTD will be their introduction to the graceful new East Span. For eastbound drivers from San Francisco, this section of the bridge will carry them from the Skyway to the East Bay, offering unobstructed views of the Oakland hills.

The OTD will be constructed through two contracts. The first contract will build the new westbound lanes, as well as part of the eastbound lanes. The second contract to complete the eastbound lanes cannot fully begin until westbound traffic is shifted onto the new bridge. This enables a portion of the upper deck of the existing bridge to be demolished allowing for a smooth transition for the new eastbound lanes in Oakland.

F Oakland Touchdown #1 Contract

Contractor: MCM Construction, Inc.

Approved Capital Outlay Budget: \$212.0 M

Status: Completed June 2010

The OTD #1 contract constructs the entire 1,000-foot-long westbound approach from the toll plaza to the Skyway. When completed, the westbound approach structure will provide direct access to the westbound Skyway. In the eastbound direction, the contract will construct a portion of the eastbound structure and all of the eastbound foundations that are not in conflict with the existing bridge.

Status: MCM Construction, Inc. completed OTD #1 westbound and eastbound phase 1 on June 8, 2010.

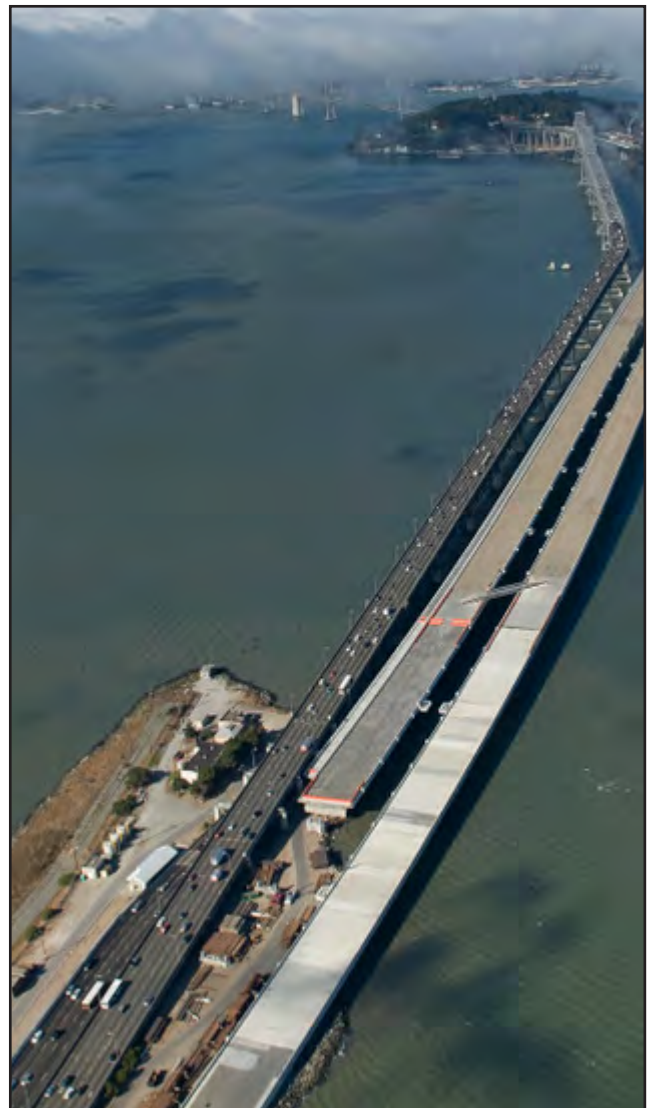
G Oakland Touchdown #2 Contract

Contractor: TBD

Approved Capital Outlay Budget: \$62.0 M

Status: In Design

The OTD #2 contract will complete the eastbound approach structure from the end of the Skyway to Oakland. This work is critical to the eastbound opening of the new bridge, but cannot be completed until westbound traffic has been shifted off the existing upper deck to the new SAS bridge.



Aerial View of Oakland Touchdown Looking West

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

San Francisco-Oakland Bay Bridge East Span Replacement Project Other Contracts

A number of contracts needed to relocate utilities, clear areas of archeological artifacts, and prepare areas for future work have already been completed. The last major contract will be the eventual demolition and removal of the existing bridge, which by that time will have served the Bay Area for nearly 80 years. Following is a status of some the other East Span contracts.

East Span Interim Seismic Retrofit

Contractors: 1) California Engineering
2) Balfour Beatty

Approved Capital Outlay Budget: \$30.8 M

Status: Completed October 2000

After the 1989 Loma Prieta Earthquake, and before the final retrofit strategy was determined for the East Span, Caltrans completed an interim retrofit of the existing bridge to prevent a catastrophic collapse of the bridge should a similar earthquake occur before the East Span was completely replaced. The interim retrofit was performed under two separate contracts that lengthened pier seats, added some structural members, and strengthened areas of the bridge so they would be more resilient during an earthquake.

Stormwater Treatment Measures

Contractor: Diablo Construction, Inc.

Approved Capital Outlay Budget: \$18.3 M

Status: Completed December 2008

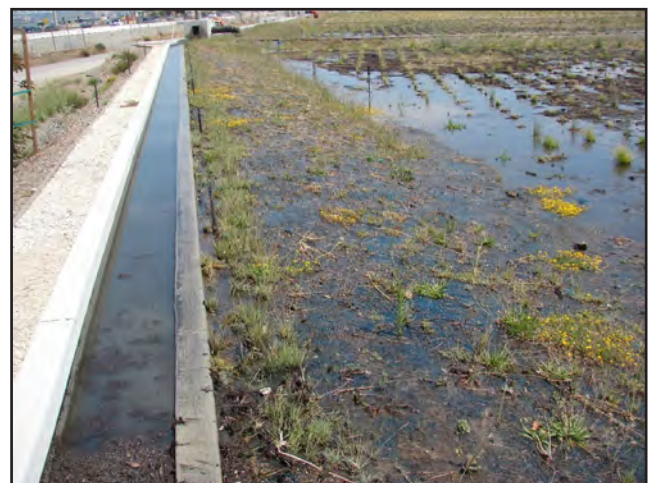
The Stormwater Treatment Measures contract implemented a number of best practices for the management and treatment of stormwater runoff. Focused on the areas around and approaching the toll plaza, the contract added new drainage and built new bio-retention swales and other related constructs.



Archeological Investigations



Existing East Span of the San Francisco-Oakland Bay Bridge



Stormwater Retention Basin



Yerba Buena Island Substation

Contractor: West Bay Builders

Approved Capital Outlay Budget: \$11.6 M

Status: Completed May 2005

This contract relocated an electrical substation just east of the Yerba Buena Island Tunnel in preparation for the new East Span.

Pile Installation Demonstration

Contractor: Manson and Dutra, Joint Venture

Approved Capital Outlay Budget: \$9.3 M

Status: Completed December 2000

While large-diameter battered piles are common in offshore drilling, the new East Span is one of the first bridges to use them in its foundations. To minimize project risks and build industry knowledge, a pile installation demonstration project was initiated to prove the efficacy of the proposed technology and methodology. The demonstration was highly successful and helped result in zero contract change orders or claims for pile driving on the project.

H Existing Bridge Demolition

Contractor: TBD

Approved Capital Outlay Budget: \$239.1 M

Status: In Design

Design work on the contract will start in earnest as the opening of the new bridge to traffic approaches.



New YBI Electrical Substation

I Electrical Cable Relocation

Contractor: Manson Construction

Approved Capital Outlay Budget: \$9.6 M

Status: Completed January 2008

A submerged cable from Oakland that is close to where the new bridge will touch down supplies electrical power to Treasure Island. To avoid any possible damage to the cable during construction, two new replacement cables were run from Oakland to Treasure Island. The extra cable was funded by the Treasure Island Development Authority.

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Antioch Bridge Seismic Retrofit Project

Contractor: California Engineering Contractors, Inc.

Approved Capital Outlay Budget: \$70.0 M

Status: 13% Complete as of August 2010

Serving the Delta region of the Bay Area, the Antioch Bridge takes State Route 160 traffic over the San Joaquin River, linking eastern Contra Costa County with Sacramento County. The current 1.8-mile-long steel plate girder bridge was opened in 1978 with one lane in each direction. The current retrofit strategy for the bridge includes relatively minor modifications to the approach structure on Sherman Island, the addition of isolation bearings and strengthening of the columns and hinge retrofits.

Status: The first working day of the project was July 13, 2010 and the contractor has completed building trestle #2 adjacent to State Route 160 and will begin with trestle #1 by July 27th. Work with the temporary roadway #2 at Sherman Island between Piers 22 and 38 is complete and 90 percent of the curtain wall has been removed at the slab span bridge. The remaining panels will be removed close to the end of the project.



Scaffolding for Bent Cap Retrofit is Hung from Existing Plate Girders

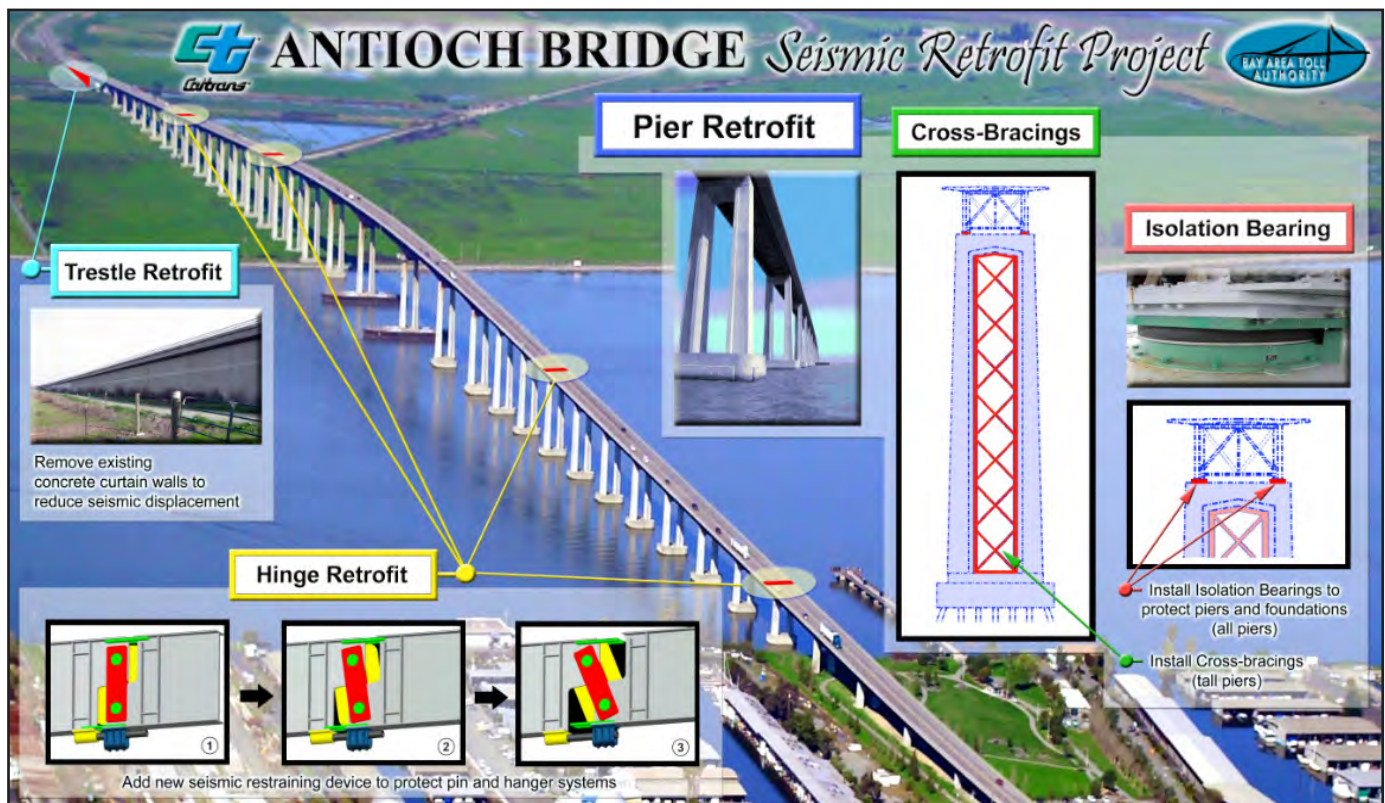


Diagram of Proposed Retrofit Work on the Antioch Bridge



Antioch Seismic Retrofit Project General Contractor, California Engineering Contractors, Inc.



View Looking toward Antioch, Main Spans

Dumbarton Bridge Seismic Retrofit Project

Contractor: Shimmick Construction Company, Inc.

Approved Capital Outlay Budget: \$270.0 M

Status: Awarded

The current Dumbarton Bridge was opened to traffic in 1982 linking the cities of Newark in Alameda County and East Palo Alto in San Mateo County. The 1.6-mile long bridge has six lanes (three in each direction) and an eight-foot bicycle/pedestrian pathway. The bridge is a combination of reinforced concrete and steel girders that support a reinforced lightweight concrete roadway on reinforced concrete columns. The current retrofit strategy for the bridge includes superstructure and deck modifications and installation of isolation bearings.



Dumbarton Bridge

Status: On June 15, 2010, Caltrans opened seven bids for the Dumbarton Bridge Seismic Retrofit Project. The Dumbarton Retrofit Project had an engineer's estimate of \$73 million, which included supplemental work and contract contingencies, and included a maximum construction duration of 810 working days. The low bidder, Shimmick Construction Company, Inc. bid is substantially less at \$46.6 million. On September 2, 2010, the TBPOC will review the budgeting for the project. Given the low bid for project construction and

the current estimated support costs and project contingencies, it is proposed that the budget be revised to a total of \$267 million, which is \$216 million below the original estimate.

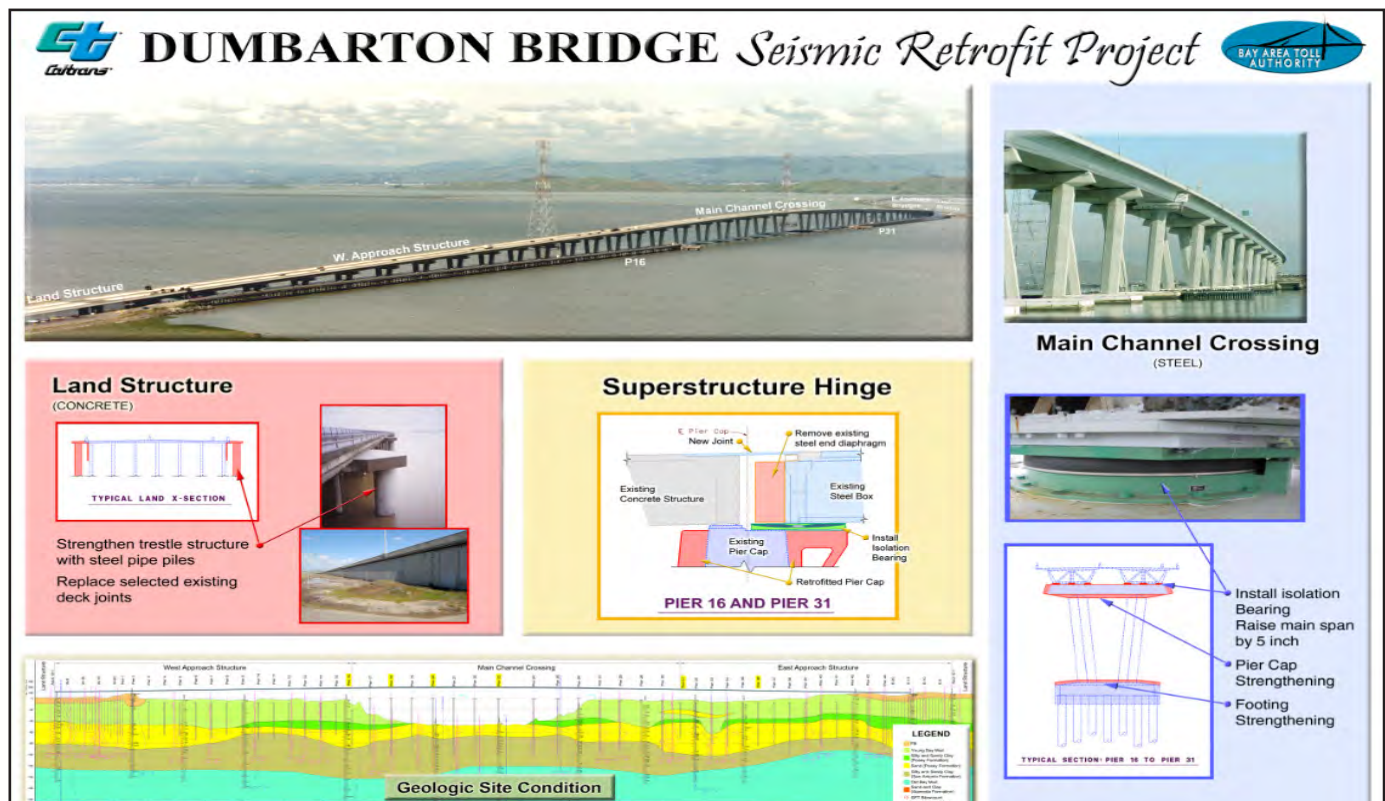


Diagram of Proposed Retrofit Work on the Dumbarton Bridge



Dumbarton Bridge

TOLL BRIDGE SEISMIC RETROFIT PROGRAM

Other Completed Projects

In the 1990s, the State Legislature identified seven of the nine state-owned toll bridges for seismic retrofit. In addition to the San Francisco-Oakland Bay Bridge, these included the Benicia-Martinez, Carquinez, Richmond-San Rafael and San Mateo-Hayward bridges in the Bay Area, and the Vincent Thomas and Coronado bridges in Southern California. Other than the East Span of the Bay Bridge, the retrofits of all of the bridges have been completed as planned.

San Mateo-Hayward Bridge Seismic Retrofit Project

Project Status: Completed 2000

The San Mateo-Hayward Bridge seismic retrofit project focused on strengthening the high-rise portion of the span. The foundations of the bridge were significantly upgraded with additional piles.



High-Rise Section of San Mateo-Hayward Bridge

1958 Carquinez Bridge Seismic Retrofit Project

Project Status: Completed 2002

The eastbound 1958 Carquinez Bridge was retrofitted in 2002 with additional reinforcement of the cantilever thru-truss structure.



1958 Carquinez Bridge (foreground) with the 1927 Span (middle) under Demolition and the New Alfred Zampa Memorial Bridge (background)

1962 Benicia-Martinez Bridge Seismic Retrofit Project

Project Status: Completed 2003

The southbound 1962 Benicia-Martinez Bridge was retrofitted to "Lifeline" status with the strengthening of the foundations and columns and the addition of seismic bearings that allow the bridge to move during a major seismic event. The Lifeline status means the bridge is designed to sustain minor to moderate damage after an event and to reopen quickly to emergency response traffic.



1962 Benicia-Martinez Bridge (right)

Richmond-San Rafael Bridge Seismic Retrofit Project

Project Status: Completed 2005

The Richmond-San Rafael Bridge was retrofitted to a “No Collapse” classification to avoid catastrophic failure during a major seismic event. The foundations, columns, and truss of the bridge were strengthened, and the entire low-rise approach viaduct from Marin County was replaced.



Richmond-San Rafael Bridge

Los Angeles-Vincent Thomas Bridge Seismic Retrofit Project

Project Status: Completed 2000

The Vincent Thomas Bridge is a 1,500-foot long suspension bridge crossing the Los Angeles Harbor in Los Angeles that links San Pedro with Terminal Island. The bridge was one of two state-owned toll bridges in Southern California (the other being the San Diego-Coronado Bridge). Opened in 1963, the bridge was seismically retrofitted as part of the TBSRP in 2000.



Los Angeles-Vincent Thomas Bridge

San Diego-Coronado Bridge Seismic Retrofit Project

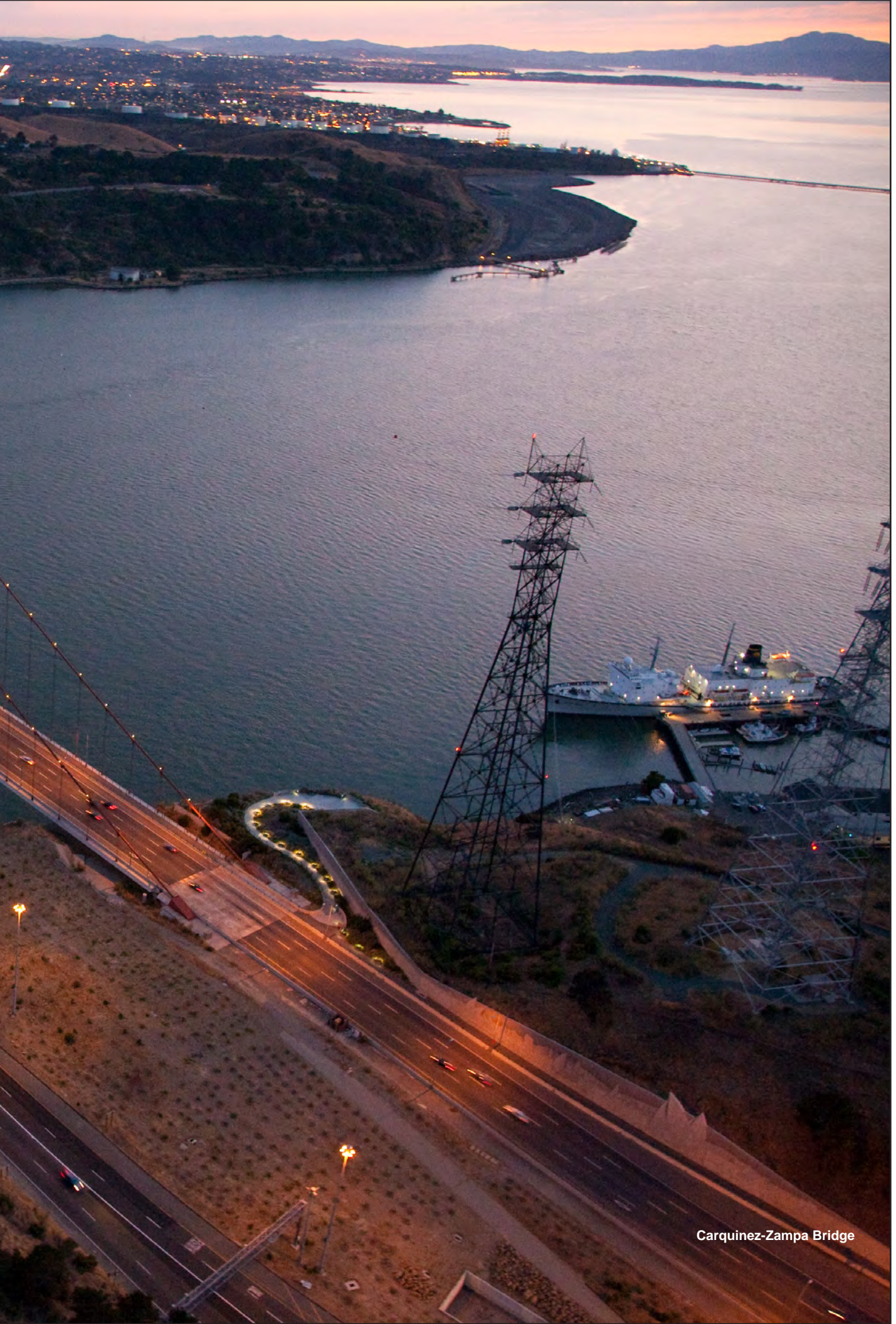
Project Status: Completed 2002

The San Diego-Coronado Bridge crosses over San Diego Bay and links the cities of San Diego and Coronado. Opened in 1969, the 2.1-mile long bridge was seismically retrofitted as part of the Toll Bridge Seismic Retrofit Project in 2002.



San Diego-Coronado Bridge





Carquinez-Zampa Bridge

REGIONAL MEASURE 1 TOLL BRIDGE PROGRAM

REGIONAL MEASURE 1 PROGRAM

Interstate 880/State Route 92 Interchange Reconstruction Project

Project Status: In Construction

The Interstate 880/State Route 92 Interchange Reconstruction Project is the final project under the Regional Measure 1 Toll Bridge Program. Project completion fulfills a promise made to Bay Area voters in 1988 to deliver a slate of projects that help expand bridge capacity and improve safety on the bridges.

Interstate 880/State Route 92 Interchange Reconstruction Contract

Contractor: Flatiron/Granite

Approved Capital Outlay Budget: \$158.0 M

Status: 76% Complete as of August 2010

This corridor is consistently one of the Bay Area's most congested during the evening commute. This is due in part to the lane merging and weaving that is required by the existing cloverleaf interchange. The new interchange will feature direct freeway-to-freeway connector ramps that will increase traffic capacity and improve overall safety and traffic operations in the area. With the new direct-connector ramps, drivers coming off the San Mateo-Hayward Bridge can access Interstate 880 without having to compete with traffic headed onto east Route 92 from south Interstate 880 (see progress photos on pages 64 and 65).



Overview of Progress on 92/880



Current Progress of Interstate 880/State Route 92 Interchange



Future Interstate 880/State Route 92 Interchange (as simulated) Looking West toward San Mateo

Stage 1 – Construct East Route 92 to North Interstate 880 Connector

The new east Route 92 to north Interstate 880 connector (ENCONN) is the most critical fly over structure for relieving congestion in the corridor. The ENCONN will be first used as a detour to allow for future stages of work, while keeping traffic flowing.

Status: ENCONN was completed and opened to detour traffic on May 16, 2009.

Stage 2 – Replace South Side of Route 92 Separation Structure

By detouring eastbound Route 92 traffic onto ENCONN, the existing separation structure that carries SR92 over I-880 can be replaced. The existing structure will be cut lengthwise, and then demolished and replaced separately. In this stage, the south side of the structure will be replaced, while west Route 92 and south-Interstate-880-to-east-Route-92 traffic will stay on the remaining structure.

Status: Work on the south side of the separation structure is complete.

Stage 3 – Replace North Side of Route 92 Separation Structure

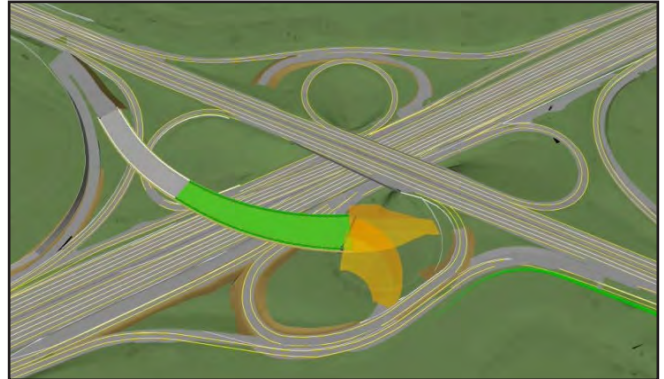
Upon completion of Stage 2, the existing north side of the separation structure will be demolished and replaced. Its traffic will then be shifted onto the newly reconstructed south side.

Status: The demolition of the existing westbound separation structure (north side) was completed on May 5, 2010. The north side structure is forecast to be complete in March of 2011.

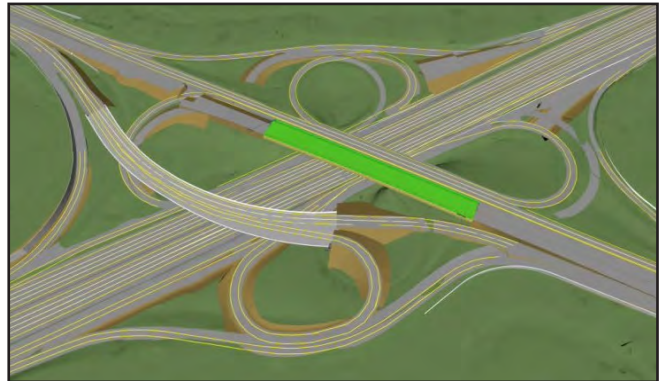
Stage 4 – Final Realignment and Other Work

In addition to ENCONN and the separation structure, direct north 880 to west 92 connector (NWCONN) and west 92 to south 880 connector (WSCONN) remain to be completed along with a new Eldridge Avenue Pedestrian Overcrossing and new Calaroga Avenue Overcrossing.

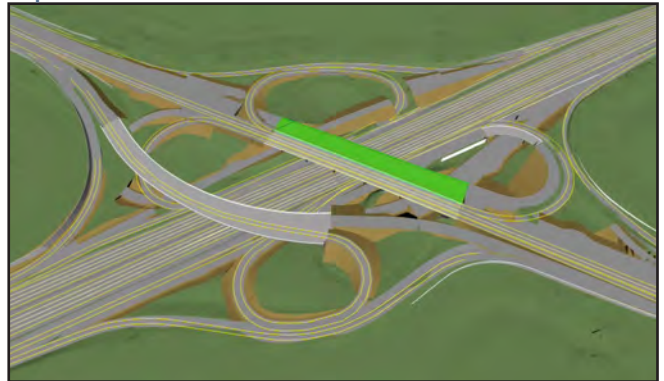
Status: Both NWCONN and WSCONN are under construction.



Stage 1 - Construct East Route 92 to North Interstate 880 Direct Connector



Stage 2 - Demolish and Replace South Side of Route 92 Separation Structure



Stage 3 - Demolish and Replace North Side of Route 92 Separation Structure



Stage 4 - Final Realignment and Other Work

REGIONAL MEASURE 1 PROGRAM

Other Completed Projects

San Mateo-Hayward Bridge-Widening Project

Project Status: Completed 2003

This project expanded the low-rise concrete trestle section of the San Mateo-Hayward Bridge to allow for three lanes in each direction to match the existing configuration of the high-rise steel section of the bridge.



Widening of the San Mateo-Hayward Bridge Trestle on Left

Richmond-San Rafael Bridge Rehabilitation Projects

Project Status: Completed 2006

Two major rehabilitation projects for the Richmond-San Rafael Bridge were funded and completed: (1) replacement of the western concrete approach trestle and ship-collision protection fender system; and (2) rehabilitation of deck joints and resurfacing of the bridge deck.

In 2005, along with the seismic retrofit of the bridge, the trestle and fender replacement work was completed as part of the same project. Under a separate contract in 2006, the bridge was resurfaced with a polyester concrete overlay along with the repair of numerous deck joints.



New Richmond-San Rafael Bridge West Approach Trestle under Construction

Richmond Parkway Construction Project

Project Status: Completed 2001

The final connections to the Richmond Parkway from Interstate 580 near the Richmond-San Rafael Bridge were completed in May 2001.

New Alfred Zampa Memorial (Carquinez) Bridge Project

Project Status: Completed 2003



New Alfred Zampa Memorial (Carquinez) Bridge Soon after Opening to Traffic, with Crockett Interchange Still under Construction

The new western span of the Carquinez Bridge, which replaced the original 1927 span, is a twin-towered suspension bridge with three mixed-flow lanes, a new carpool lane shoulders and a bicycle and pedestrian pathway.

Benicia-Martinez Bridge Project

Project Status: Completed 2009



Benicia-Martinez Bridge Pedestrian/Bicycle Pathway Opened to the Public in August 2009

A two-year project to rehabilitate and reconfigure the original Benicia-Martinez Bridge began shortly after the opening of the new Congressman George Miller Bridge. The existing 1.2-mile roadway surface on the steel deck truss bridge was modified to carry four lanes of southbound traffic (one more than before)—with shoulders on both sides—plus a bicycle/pedestrian path on the west side of the span that connects to Park Road in Benicia and to Marina Vista Boulevard in Martinez. Reconstruction of the east side of the bridge and approaches was completed in August 2008, and reconstruction of the west side of the bridge an approaches and construction of the bicycle/pedestrian pathway was completed in August 2009.

Bayfront Expressway (State Route 84) Widening Project

Project Status: Completed 2004

This project expanded and improved the roadway from the Dumbarton Bridge touchdown to the US 101/Marsh Road interchange by adding additional lanes and turn pockets and improving bicycle and pedestrian access in the area.





APPENDICES

A. TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 2010 (A-1 and A-2).....46

B. TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 201050

C. Regional Measure 1 Program Cost Detail.....54

D. Yerba Buena Island Transition Structures (YBITS) Advanced Work Project Progress Diagram.....57

E. Project Photos.....58

F. Glossary of Terms.....66

Aerial View of the Shear-Leg Crane Barge Erecting the Last Section of the Westbound Temporary Support Structure Truss

Appendix A-1: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 2010 (\$ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (08/2010)	Cost to Date (06/2010) ¹	Cost Forecast (08/2010)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
SFOBB East Span Replacement Project						
Capital Outlay Support	959.3	203.0	1,162.3	858.0	1,272.2	109.9
Capital Outlay Construction	4,492.2	203.8	4,696.0	3,397.3	5,005.8	309.8
Other Budgeted Capital	35.1	(3.3)	31.8	0.7	7.7	(24.1)
Total	5,486.6	403.5	5,890.1	4,256.0	6,285.7	395.6
SFOBB West Approach Replacement						
Capital Outlay Support	120.0	(2.0)	118.0	117.5	118.5	0.5
Capital Outlay Construction	309.0	41.7	350.7	328.0	338.1	(12.6)
Total	429.0	39.7	468.7	445.5	456.6	(12.1)
SFOBB West Span Retrofit						
Capital Outlay Support	75.0	(0.2)	74.8	74.9	74.8	-
Capital Outlay Construction	232.9	(5.5)	227.4	227.4	227.4	-
Total	307.9	(5.7)	302.2	302.3	302.2	-
Richmond-San Rafael Bridge Retrofit						
Capital Outlay Support	134.0	(7.0)	127.0	126.8	127.0	-
Capital Outlay Construction	780.0	(90.5)	689.5	667.5	689.5	-
Total	914.0	(97.5)	816.5	794.3	816.5	-
Benicia-Martinez Bridge Retrofit						
Capital Outlay Support	38.1	-	38.1	38.1	38.1	-
Capital Outlay Construction	139.7	-	139.7	139.7	139.7	-
Total	177.8	-	177.8	177.8	177.8	-
Carquinez Bridge Retrofit						
Capital Outlay Support	28.7	0.1	28.8	28.8	28.8	-
Capital Outlay Construction	85.5	(0.1)	85.4	85.4	85.4	-
Total	114.2	-	114.2	114.2	114.2	-
San Mateo-Hayward Retrofit						
Capital Outlay Support	28.1	-	28.1	28.1	28.1	-
Capital Outlay Construction	135.4	(0.1)	135.3	135.3	135.3	-
Total	163.5	(0.1)	163.4	163.4	163.4	-
Vincent Thomas Bridge Retrofit (Los Angeles)						
Capital Outlay Support	16.4	-	16.4	16.4	16.4	-
Capital Outlay Construction	42.1	(0.1)	42.0	42.0	42.0	-
Total	58.5	(0.1)	58.4	58.4	58.4	-
San Diego-Coronado Bridge Retrofit						
Capital Outlay Support	33.5	(0.3)	33.2	33.2	33.2	-
Capital Outlay Construction	70.0	(0.6)	69.4	69.4	69.4	-
Total	103.5	(0.9)	102.6	102.6	102.6	-

¹ Due to the delays in implementation of a new Caltrans accounting system, cost data is only available through June 30, 2010.

Appendix A-1: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 2010 (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (08/2010)	Cost to Date (06/2010) ¹	Cost Forecast (08/2010)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
Antioch Bridge						
Capital Outlay Support	-	31.0	31.0	9.6	35.5	4.5
Capital Outlay Support by BATA				6.2		
Capital Outlay Construction	-	70.0	70.0	-	62.5	(7.5)
Total	-	101.0	101.0	15.8	98.0	(3.0)
Dumbarton Bridge						
Capital Outlay Support	-	95.0	95.0	15.9	56.0	(39.0)
Capital Outlay Support by BATA				6.0		
Capital Outlay Construction	-	270.0	270.0	0.3	92.7	(177.3)
Total	-	365.0	365.0	22.2	148.7	(216.3)
Subtotal Capital Outlay Support	1,433.1	319.6	1,752.7	1,359.5	1,828.6	75.9
Subtotal Capital Outlay	6,286.8	488.6	6,775.4	5,092.3	6,887.8	112.4
Subtotal Other Budgeted Capital	35.1	(3.3)	31.8	0.7	7.7	(24.1)
Miscellaneous Program Costs	30.0	-	30.0	25.5	30.0	-
Subtotal Toll Bridge Seismic Retrofit Program	7,785.0	804.9	8,589.9	6,478.0	8,754.1	164.2
Net Programmatic Risks*	-	-	-	-	202.8	202.8
Program Contingency	900.0	(191.9)	708.1	-	341.1	(367.0)
Total Toll Bridge Seismic Retrofit Program ¹	8,685.0	613.0	9,298.0	6,478.0	9,298.0	-

¹ Figures may not sum up to totals due to rounding effects.

Appendix A-2: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 2010 (\$ Millions)

Bridge	AB 144 Baseline Budget	TBPOC Current Approved Budget	Expenditures to date and Encumbrances as of June 2010 See Note (1)	Estimated Costs not yet spent or Encumbered as of June 2010	Total Forecast as of August 2010
a	b	c	d	e	f = d + e
Other Completed Projects					
Capital Outlay Support	144.9	144.6	144.6	-	144.6
Capital Outlay	472.6	471.9	472.6	(0.8)	471.8
Total	617.5	616.5	617.2	(0.8)	616.4
Richmond-San Rafael					
Capital Outlay Support	134.0	127.0	126.8	0.2	127.0
Capital Outlay	698.0	689.5	674.1	15.4	689.5
Project Reserves	82.0	-	-	-	-
Total	914.0	816.5	800.9	15.6	816.5
West Span Retrofit					
Capital Outlay Support	75.0	74.8	74.8	-	74.8
Capital Outlay	232.9	227.4	232.9	(5.5)	227.4
Total	307.9	302.2	307.7	(5.5)	302.2
West Approach					
Capital Outlay Support	120.0	118.0	117.6	0.9	118.5
Capital Outlay	309.0	350.7	342.5	(4.4)	338.1
Total	429.0	468.7	460.1	(3.5)	456.6
SFOBB East Span - Skyway					
Capital Outlay Support	197.0	181.2	181.1	0.1	181.2
Capital Outlay	1,293.0	1,254.1	1,368.3	(114.2)	1,254.1
Total	1,490.0	1,435.3	1,549.4	(114.1)	1,435.3
SFOBB East Span - SAS - Superstructure					
Capital Outlay Support	214.6	375.5	244.3	228.0	472.3
Capital Outlay	1,753.7	1,753.7	1,753.7	293.1	2,046.8
Total	1,968.3	2,129.2	1,998.0	521.1	2,519.1
SFOBB East Span - SAS - Foundations					
Capital Outlay Support	62.5	37.6	37.6	-	37.6
Capital Outlay	339.9	307.3	308.7	(1.4)	307.3
Total	402.4	344.9	346.3	(1.4)	344.9
Small YBI Projects					
Capital Outlay Support	10.6	10.6	10.2	0.4	10.6
Capital Outlay	15.6	15.6	16.6	(0.9)	15.7
Total	26.2	26.2	26.8	(0.5)	26.3
YBI Detour					
Capital Outlay Support	29.5	90.7	83.8	6.3	90.1
Capital Outlay	131.9	492.8	493.1	(3.7)	489.4
Total	161.4	583.5	576.9	2.6	579.5
YBI- Transition Structures					
Capital Outlay Support	78.7	106.4	16.4	99.8	116.2
Capital Outlay	299.4	206.3	125.9	112.5	238.4
Total	378.1	312.7	142.3	212.3	354.6

Appendix A-2: TBSRP AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 2010 (\$ Millions) Cont.

Contract	AB 144 Baseline Budget	TBPOC Current Approved Budget	Expenditures to date and Encumbrances as of June 2010 see Note (1)	Estimated Costs not yet spent or Encumbered as of June 2010	Total Forecast as of August 2010
a	b	c	d	e	f = d + e
Oakland Touchdown					
Capital Outlay Support	74.4	93.9	77.2	18.0	95.2
Capital Outlay	283.8	288.0	218.0	64.1	282.1
Total	358.2	381.9	295.2	82.1	377.3
East Span Other Small Projects					
Capital Outlay Support	212.3	206.5	214.2	(7.6)	206.6
Capital Outlay	170.8	170.8	94.0	52.6	146.6
Total	383.1	377.3	308.2	45.0	353.2
Existing Bridge Demolition					
Capital Outlay Support	79.7	59.9	0.4	62.0	62.4
Capital Outlay	239.2	239.1	-	233.0	233.0
Total	318.9	299.0	0.4	295.0	295.4
Antioch Bridge					
Capital Outlay Support	-	31.0	9.8	19.5	29.3
Capital Outlay Support by BATA			6.2	-	6.2
Capital Outlay	-	70.0	47.0	15.5	62.5
Total	-	101.0	63.0	35.0	98.0
Dumbarton Bridge					
Capital Outlay Support	-	95.0	15.9	34.1	50.0
Capital Outlay Support by BATA			6.0	-	6.0
Capital Outlay	-	270.0	0.3	92.4	92.7
Total	-	365.0	22.2	126.5	148.7
Miscellaneous Program Costs	30.0	30.0	25.5	4.5	30.0
Total Capital Outlay Support	1,463.2	1,782.7	1,392.4	466.2	1,858.6
Total Capital Outlay	6,321.8	6,807.2	6,147.7	747.8	6,895.5
Program Total ¹	7,785.0	8,589.9	7,540.1	1,214.0	8,754.1

(1). Funds allocated to project or contract for Capital Outlay and Support needs includes Capital Outlay Support total allocation for FY 06/07.

(2). BSA provided a distribution of program contingency in December 2004 based in Bechtel Infrastructure Corporation input.

This Column is subject to revision upon completion of Department's risk assessment update.

(3) Total Capital Outlay Support includes program indirect costs.

¹ Figures may not sum up to totals due to rounding effects.

Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 2010 (\$ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (08/2010)	Cost to Date (06/2010) ¹	Cost Forecast (08/2010)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
San Francisco-Oakland Bay Bridge East Span Replacement Project						
East Span - SAS Superstructure						
Capital Outlay Support	214.6	160.9	375.5	238.4	472.3	96.8
Capital Outlay Construction	1,753.7	-	1,753.7	1,054.0	2,046.8	293.1
Total	1,968.3	160.9	2,129.2	1,292.4	2,519.1	389.9
SAS W2 Foundations						
Capital Outlay Support	10.0	(0.8)	9.2	9.2	9.2	-
Capital Outlay Construction	26.4	-	26.4	26.4	26.4	-
Total	36.4	(0.8)	35.6	35.6	35.6	-
YBI South/South Detour						
Capital Outlay Support	29.4	61.3	90.7	83.3	90.1	(0.6)
Capital Outlay Construction	131.9	360.9	492.8	452.8	489.4	(3.4)
Total	161.3	422.2	583.5	536.1	579.5	(4.0)
East Span - Skyway						
Capital Outlay Support	197.0	(15.8)	181.2	181.2	181.2	-
Capital Outlay Construction	1,293.0	(38.9)	1,254.1	1,236.9	1,254.1	-
Total	1,490.0	(54.7)	1,435.3	1,418.1	1,435.3	-
East Span - SAS E2/T1 Foundations						
Capital Outlay Support	52.5	(24.1)	28.4	28.4	28.4	-
Capital Outlay Construction	313.5	(32.6)	280.9	274.8	280.9	-
Total	366.0	(56.7)	309.3	303.2	309.3	-
YBI Transition Structures (see notes below)						
Capital Outlay Support	78.7	27.7	106.4	32.5	116.2	9.8
Capital Outlay Construction	299.3	(93.0)	206.3	12.3	238.4	32.1
Total	378.0	(65.3)	312.7	44.8	354.6	41.9
* YBI- Transition Structures						
Capital Outlay Support			16.4	16.4	16.5	0.1
Capital Outlay Construction			-	-	-	-
Total			16.4	16.4	16.5	0.1
* YBI- Transition Structures Contract No. 1						
Capital Outlay Support			57.0	11.2	65.7	8.7
Capital Outlay Construction			144.0	12.3	164.3	20.3
Total			201.0	23.5	230.0	29.0
* YBI- Transition Structures Contract No. 2						
Capital Outlay Support			32.0	4.8	33.0	1.0
Capital Outlay Construction			59.0	-	70.8	11.8
Total			91.0	4.8	103.8	12.8
* YBI- Transition Structures Contract No. 3 Landscape						
Capital Outlay Support			1.0	-	1.0	-
Capital Outlay Construction			3.3	-	3.3	-
Total			4.3	-	4.3	-

¹ Due to the delays in implementation of a new Caltrans accounting system, cost data is only available through June 30, 2010.

Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 2010 (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (07/2010)	Cost to Date (06/2010) ¹	Cost Forecast (07/2010)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
Oakland Touchdown (see notes below)						
Capital Outlay Support	74.4	19.5	93.9	76.6	95.2	1.3
Capital Outlay Construction	283.8	4.2	288.0	208.7	282.1	(5.9)
Total	358.2	23.7	381.9	285.3	377.3	(4.6)
*OTD Prior-to-Split Costs						
Capital Outlay Support			21.7	20.1	21.7	-
Capital Outlay Construction			-	-	-	-
Total			21.7	20.1	21.7	-
*OTD Submarine Cable						
Capital Outlay Support			0.9	0.9	0.9	-
Capital Outlay Construction			9.6	7.9	9.6	-
Total			10.5	8.8	10.5	-
*OTD No.1 (Westbound)						
Capital Outlay Support			47.3	47.7	47.6	0.3
Capital Outlay Construction			212.0	200.8	208.9	(3.1)
Total			259.3	248.5	256.5	(2.8)
*OTD No.2 (Eastbound)						
Capital Outlay Support			22.5	7.2	23.5	1.0
Capital Outlay Construction			62.0	-	59.2	(2.8)
Total			84.5	7.2	82.7	(1.8)
*OTD Electrical Systems						
Capital Outlay Support			1.5	0.8	1.5	-
Capital Outlay Construction			4.4	-	4.4	-
Total			5.9	0.8	5.9	-
Existing Bridge Demolition						
Capital Outlay Support	79.7	(19.8)	59.9	0.4	62.4	2.5
Capital Outlay Construction	239.2	(0.1)	239.1	-	233.0	(6.1)
Total	318.9	(19.9)	299.0	0.4	295.4	(3.6)
YBI/SAS Archeology						
Capital Outlay Support	1.1	-	1.1	1.1	1.1	-
Capital Outlay Construction	1.1	-	1.1	1.1	1.1	-
Total	2.2	-	2.2	2.2	2.2	-
YBI - USCG Road Relations						
Capital Outlay Support	3.0	-	3.0	2.7	3.0	-
Capital Outlay Construction	3.0	-	3.0	2.8	3.0	-
Total	6.0	-	6.0	5.5	6.0	-
YBI - Substation and Viaduct						
Capital Outlay Support	6.5	-	6.5	6.4	6.5	-
Capital Outlay Construction	11.6	-	11.6	11.3	11.6	-
Total	18.1	-	18.1	17.7	18.1	-
Oakland Geofill						
Capital Outlay Support	2.5	-	2.5	2.5	2.5	-
Capital Outlay Construction	8.2	-	8.2	8.2	8.2	-
Total	10.7	-	10.7	10.7	10.7	-

¹ Due to the delays in implementation of a new Caltrans accounting system, cost data is only available through June 30, 2010.

Appendix B: TBSRP (SFOBB East Span Only) AB 144/SB 66 Baseline Budget, Forecasts and Expenditures through August 31, 2010 (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (08/2010)	Cost to Date (06/2010) ¹	Cost Forecast (08/2010)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
Pile Installation Demonstration Project						
Capital Outlay Support	1.8	-	1.8	1.8	1.8	-
Capital Outlay Construction	9.3	-	9.3	9.2	9.3	-
Total	11.1	-	11.1	11.0	11.1	-
Stormwater Treatment Measures						
Capital Outlay Support	6.0	2.2	8.2	8.1	8.2	-
Capital Outlay Construction	15.0	3.3	18.3	16.7	18.3	-
Total	21.0	5.5	26.5	24.8	26.5	-
Right-of-Way and Environmental Mitigation						
Capital Outlay Support	-	-	-	-	-	-
Capital Outlay & Right-of-Way	72.4	-	72.4	51.3	72.4	-
Total	72.4	-	72.4	51.3	72.4	-
Sunk Cost - Existing East Span Retrofit						
Capital Outlay Support	39.5	-	39.5	39.5	39.5	-
Capital Outlay Construction	30.8	-	30.8	30.8	30.8	-
Total	70.3	-	70.3	70.3	70.3	-
Other Capital Outlay Support						
Environmental Phase	97.7	-	97.7	97.8	97.7	-
Pre-Split Project Expenditures	44.9	-	44.9	44.9	44.9	-
Non-project Specific Costs	20.0	(8.0)	12.0	3.2	12.0	-
Total	162.6	(8.0)	154.6	145.9	154.6	-
Subtotal Capital Outlay Support	959.3	203.0	1,162.3	858.0	1,272.2	109.9
Subtotal Capital Outlay Construction	4,492.2	203.8	4,696.0	3,397.3	5,005.8	309.8
Other Budgeted Capital	35.1	(3.3)	31.8	0.7	7.7	(24.1)
						-
Total SFOBB East Span Replacement Project²	5,486.6	403.5	5,890.1	4,256.0	6,285.7	395.6

¹ Due to the delays in implementation of a new Caltrans accounting system, cost data is only available through June 30, 2010.

² Figures may not sum up to totals due to rounding effects.

Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (08/2010)	Cost to Date (06/2010) ¹	Cost Forecast (08/2010)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
New Benicia-Martinez Bridge Project						
New Bridge						
Capital Outlay Support						
BATA Funding	84.9	6.9	91.8	91.9	91.9	0.1
Non-Bata Funding	-	0.1	0.1	0.1	0.1	-
Subtotal	84.9	7.0	91.9	92.0	92.0	0.1
Capital Outlay Construction			-			-
BATA Funding	661.9	94.6	756.5	753.8	756.5	-
Non-Bata Funding	10.1	-	10.1	10.1	10.1	-
Subtotal	672.0	94.6	766.6	763.9	766.6	-
Total	756.9	101.6	858.5	855.9	858.6	0.1
I-680/I-780 Interchange Reconstruction						
Capital Outlay Support						
BATA Funding	24.9	5.2	30.1	30.1	30.1	-
Non-Bata Funding	1.4	5.2	6.6	6.3	6.6	-
Subtotal	26.3	10.4	36.7	36.4	36.7	-
Capital Outlay Construction						
BATA Funding	54.7	26.9	81.6	77.1	81.6	-
Non-Bata Funding	21.6	-	21.6	21.7	21.7	0.1
Subtotal	76.3	26.9	103.2	98.8	103.3	0.1
Total	102.6	37.3	139.9	135.2	140.0	0.1
I-680/Marina Vista Interchange Reconstruction						
Capital Outlay Support	18.3	1.8	20.1	20.2	20.2	0.1
Capital Outlay Construction	51.5	4.9	56.4	56.1	56.4	-
Total	69.8	6.7	76.5	76.3	76.6	0.1
New Toll Plaza and Administration Building						
Capital Outlay Support	11.9	3.8	15.7	15.7	15.7	-
Capital Outlay Construction	24.3	2.0	26.3	25.1	26.3	-
Total	36.2	5.8	42.0	40.8	42.0	-
Existing Bridge & Interchange Modifications						
Capital Outlay Support						
BATA Funding	4.3	13.5	17.8	17.8	17.8	-
Non-Bata Funding	-	0.9	0.9	0.8	0.9	-
Subtotal	4.3	14.4	18.7	18.6	18.7	-
Capital Outlay Construction						
BATA Funding	17.2	32.8	50.0	37.2	50.0	-
Non-Bata Funding	-	9.5	9.5	9.5	9.5	-
Subtotal	17.2	42.3	59.5	37.2	59.5	-
Total	21.5	56.7	78.2	55.8	78.2	-
Other Contracts						
Capital Outlay Support	11.4	(2.3)	9.1	9.1	9.1	-
Capital Outlay Construction	20.3	3.3	23.6	17.8	23.6	-
Capital Outlay Right-of-Way	20.4	(0.1)	20.3	17.0	20.3	-
Total	52.1	0.9	53.0	43.9	53.0	-

¹ Due to the delays in implementation of a new Caltrans accounting system, cost data is only available through June 30, 2010.

Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (08/2010)	Cost to Date (06/2010) ¹	Cost Forecast (08/2010)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
New Benicia-Martinez Bridge Project continued...						
Subtotal BATA Capital Outlay Support	155.7	28.9	184.6	184.8	184.8	0.2
Subtotal BATA Capital Outlay Construction	829.9	164.5	994.4	967.1	994.4	-
Subtotal Capital Outlay Right-of-Way	20.4	(0.1)	20.3	17.0	20.3	-
Subtotal Non-BATA Capital Outlay Support	1.4	6.2	7.6	7.2	7.6	-
Subtotal Non-BATA Capital Outlay Construction	31.7	9.5	41.2	31.8	41.3	0.1
Project Reserves	20.8	3.6	24.4	-	24.1	(0.3)
Total New Benicia-Martinez Bridge Project						
	1,059.9	212.6	1,272.5	1,207.9	1,272.5	-
Notes:	Includes EA's 00601_,00603_,00605_,00606_,00608_,00609_,0060A_,0060C_,0060E_,0060F_,0060G_,0060H_, and all Project Right-of-Way					
Carquinez Bridge Replacement Project						
New Bridge						
Capital Outlay Support	60.5	(0.3)	60.2	60.2	60.2	-
Capital Outlay Construction	253.3	2.7	256.0	255.9	256.0	-
Total	313.8	2.4	316.2	316.1	316.2	-
Crockett Interchange Reconstruction						
Capital Outlay Support	32.0	(0.1)	31.9	31.9	31.9	-
Capital Outlay Construction	73.9	(1.9)	72.0	71.9	72.0	-
Total	105.9	(2.0)	103.9	103.8	103.9	-
Existing 1927 Bridge Demolition						
Capital Outlay Support	16.1	(0.5)	15.6	15.7	15.7	0.1
Capital Outlay Construction	35.2	-	35.2	34.8	35.2	-
Total	51.3	(0.5)	50.8	50.5	50.9	0.1
Other Contracts						
Capital Outlay Support	15.8	1.2	17.0	16.4	17.0	-
Capital Outlay Construction	18.8	(1.2)	17.6	16.3	17.6	-
Capital Outlay Right-of-Way	10.5	(0.1)	10.4	9.9	10.4	-
Total	45.1	(0.1)	45.0	42.6	45.0	-
Subtotal BATA Capital Outlay Support						
	124.4	0.3	124.7	124.2	124.8	0.1
Subtotal BATA Capital Outlay Construction	381.2	(0.4)	380.8	378.9	380.8	-
Subtotal Capital Outlay Right-of-Way	10.5	(0.1)	10.4	9.9	10.4	-
Project Reserves	12.1	(9.8)	2.3	-	2.2	(0.1)
Total Carquinez Bridge Replacement Project ²						
	528.2	(10.0)	518.2	513.0	518.2	-
Notes	Other Contracts include EA's 01301_,01302_,01303_,01304_,01305_,01306_,01307_,01308_,01309_,0130A_,0130C_,0130D_,0130F_,0130G_,0130H_,0130J_,00453_,00493_,04700_,00607_,2A270_,and 29920_ and all Project Right-of-Way					

¹ Due to the delays in implementation of a new Caltrans accounting system, cost data is only available through June 30, 2010.² Figures may not sum up to totals due to rounding effects.

Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) Cont.

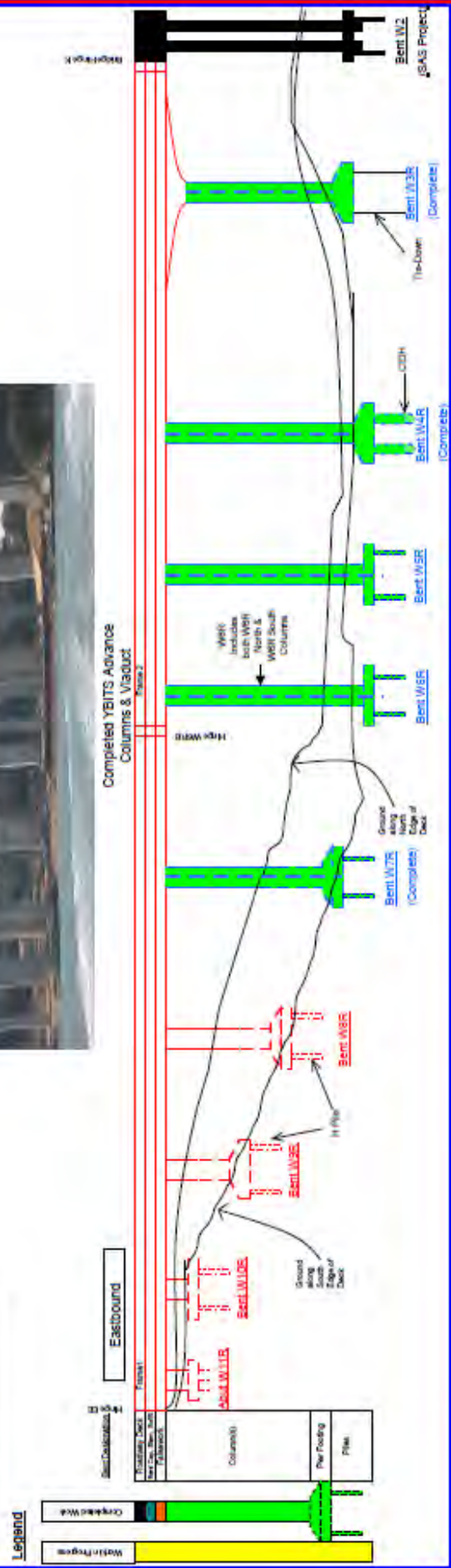
Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (08/2010)	Cost to Date (06/2010) ¹	Cost Forecast (08/2010)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation S						
Capital Outlay Support						
BATA Funding	2.2	(0.8)	1.4	1.4	1.4	-
Non-BATA Funding	8.6	1.8	10.4	10.4	10.4	-
Subtotal	10.8	1.0	11.8	11.8	11.8	-
Capital Outlay Construction						
BATA Funding	40.2	(6.8)	33.4	33.3	33.4	-
Non-BATA Funding	51.1	-	51.1	51.1	51.1	-
Subtotal	91.3	(6.8)	84.5	84.4	84.5	-
Project Reserves	-	0.8	0.8	-	0.8	-
Total	102.1	(5.0)	97.1	96.2	97.1	-
Richmond-San Rafael Bridge Deck Overlay Rehabilitation						
Capital Outlay Support						
BATA Funding	4.0	(0.7)	3.3	3.3	3.3	-
Non-BATA Funding	4.0	(4.0)	-	-	-	-
Subtotal	8.0	(4.7)	3.3	3.3	3.3	-
Capital Outlay Construction	16.9	(0.6)	16.3	16.3	16.3	-
Project Reserves	0.1	0.3	0.4	-	0.4	-
Total	25.0	(5.0)	20.0	19.6	20.0	-
Richmond Parkway Project (RM 1 Share Only)						
Capital Outlay Support	-	-	-	-	-	-
Capital Outlay Construction	5.9	-	5.9	4.3	5.9	-
Total	5.9	-	5.9	4.3	5.9	-
San Mateo-Hayward Bridge Widening						
Capital Outlay Support	34.6	(0.5)	34.1	34.1	34.1	-
Capital Outlay Construction	180.2	(6.1)	174.1	174.1	174.1	-
Capital Outlay Right-of-Way	1.5	(0.9)	0.6	0.5	0.6	-
Project Reserves	1.5	(0.5)	1.0	-	1.0	-
Total	217.8	(8.0)	209.8	208.7	209.8	-
I-880/SR-92 Interchange Reconstruction						
Capital Outlay Support	28.8	34.6	63.4	54.1	63.4	-
Capital Outlay Construction						
BATA Funding	85.2	66.2	151.4	100.3	151.4	-
Non-BATA Funding	9.6	-	9.6	9.6	9.6	-
Subtotal	94.8	66.2	161.0	100.3	161.0	-
Capital Outlay Right-of-Way	9.9	7.0	16.9	12.3	16.9	-
Project Reserves	0.3	3.4	3.7	-	3.7	-
Total	133.8	111.2	245.0	166.7	245.0	-
Bayfront Expressway Widening						
Capital Outlay Support	8.6	(0.2)	8.4	8.3	8.4	-
Capital Outlay Construction	26.5	(1.5)	25.0	24.9	25.0	-
Capital Outlay Right-of-Way	0.2	-	0.2	0.2	0.2	-
Project Reserves	0.8	(0.3)	0.5	-	0.5	-
Total	36.1	(2.0)	34.1	33.4	34.1	-

¹ Due to the delays in implementation of a new Caltrans accounting system, cost data is only available through June 30, 2010.

Appendix C: Regional Measure 1 Program Cost Detail (\$ Millions) Cont.

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (08/2010)	Cost to Date (06/2010) ¹	Cost Forecast (08/2010)	At- Completion Variance
a	c	d	e = c + d	f	g	h = g - e
US 101/University Avenue Interchange Modification						
Capital Outlay Support	-	-	-	-	-	-
Capital Outlay Construction	3.8	-	3.8	3.7	3.8	-
Total	3.8	-	3.8	3.7	3.8	-
Subtotal BATA Capital Outlay Support	358.3	61.6	419.9	410.2	420.2	0.3
Subtotal BATA Capital Outlay Construction	1,569.8	215.3	1,785.1	1,702.9	1,785.1	-
Subtotal Capital Outlay Right-of-Way	42.5	5.9	48.4	39.9	48.4	-
Subtotal Non-BATA Capital Outlay Support	14.0	4.0	18.0	17.6	18.0	-
Subtotal Non-BATA Capital Outlay Construction	92.4	9.5	101.9	82.9	102.0	0.1
Project Reserves	35.6	(2.5)	33.1	-	32.7	(0.4)
Total RM1 Program ²	2,112.6	293.8	2,406.4	2,253.5	2,406.4	-
Notes:						
1 Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation Includes Non-TBSRA Expenses for EA 0438U_ and 04157_						
2 San Mateo-Hayward Bridge Widening includes EA's 00305_,04501_,04503_,04504_, 04504_,04505_,04506_,04507_,04508_,04509_,27740_,27790_,04860_						

¹ Due to the delays in implementation of a new Caltrans accounting system, cost data is only available through June 30, 2010.² Figures may not sum up to totals due to rounding effects.



Appendix E: Project Progress Photographs

Self-Anchored Suspension Bridge Fabrication



SAS Light Pole Bracket Fabrication



SAS Roadway Box 13 Construction Model



SAS Roadway Box 9 Being Loaded for Shipping at ZPMC



SAS Tower Lift 2 - All Shafts Being Loaded for Shipping at ZPMC





Aerial View of the Viaduct and YBITS Advanced Columns

Appendix E: Project Progress Photographs

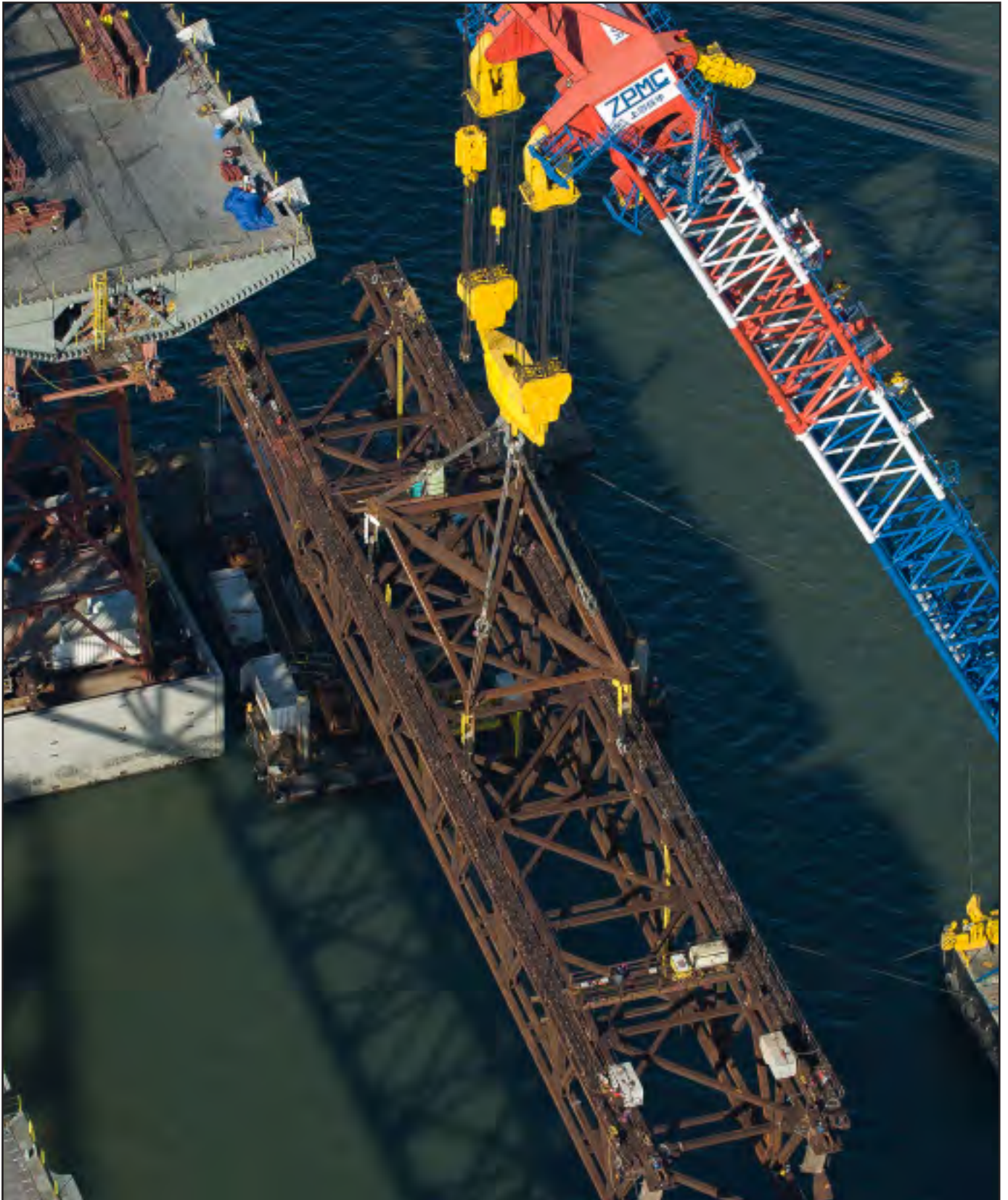
Self-Anchored Suspension Bridge Field Work



SAS Aerial View of the Shear-Leg Crane Barge Erecting the Last Section of the Westbound Temporary Support Structure Truss



SAS Aerial View of the Shear-Leg Crane Barge Erecting the Last Section of the Westbound Temporary Support Structure Truss



SAS Aerial View of the Shear-Leg Crane Barge Erecting the Last Section of the Westbound Temporary Support Structure Truss

Appendix E: Project Progress Photographs

92/880 Interchange



Eldridge Avenue Pedestrian Overcrossing (POC)



Eldridge Pedestrian Over Crossing



Overview of 92/880 Interchange

Appendix F: Glossary of Terms

Glossary of Terms

AB144/SB 66 BUDGET: The planned allocation of resources for the Toll Bridge Seismic Retrofit Program, or subordinate projects or contracts, as provided in Assembly Bill 144 and Senate Bill 66, signed into law by Governor Schwarzenegger on July 18, 2005 and September 29, 2005, respectively.

BATA BUDGET: The planned allocation of resources for the Regional Measure 1 Program, or subordinate projects or contracts as authorized by the Bay Area Toll Authority as of June 2005.

APPROVED CHANGES: For cost, changes to the AB144/SB 66 Budget or BATA Budget as approved by the Bay Area Toll Authority Commission. For schedule, changes to the AB 144/SB 66 Project Complete Baseline approved by the Toll Bridge Program Oversight Committee, or changes to the BATA Project Complete Baseline approved by the Bay Area Toll Authority Commission.

CURRENT APPROVED BUDGET: The sum of the AB144/SB66 Budget or BATA Budget and Approved Changes.

COST TO DATE: The actual expenditures incurred by the program, project or contract as of the month and year shown.

COST FORECAST: The current forecast of all of the costs that are projected to be expended so as to complete the given scope of the program, project, or contract.

AT COMPLETION VARIANCE or VARIANCE (cost): The mathematical difference between the Cost Forecast and the Current Approved Budget.

AB 144/SB 66 PROJECT COMPLETE BASELINE: The planned completion date for the Toll Bridge Seismic Retrofit Program or subordinate projects or contracts.

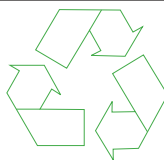
BATA PROJECT COMPLETE BASELINE: The planned completion date for the Regional Measure 1 Program or subordinate projects or contracts.

PROJECT COMPLETE CURRENT APPROVED SCHEDULE: The sum of the AB144/SB66 Project Complete Baseline or BATA Project Complete Baseline and Approved Changes.

PROJECT COMPLETE SCHEDULE FORECAST: The current projected date for the completion of the program, project, or contract.

SCHEDULE VARIANCE or VARIANCE (schedule): The mathematical difference expressed in months between the Project Complete Schedule Forecast and the Project Complete Current Approved Schedule.

% COMPLETE: % Complete is based on an evaluation of progress on the project, expenditures to date, and schedule.



100% Recyclable

This document, including the coil binding, is 100% recyclable

The information in this report is provided in accordance with California Government code Section 755. This document is one of a series of reports prepared for the Bay Area Toll Authority (BATA)/Metropolitan Transportation Commission (MTC) for the Toll Bridge Seismic Retrofit and Regional Measure 1 Programs. The contract value for the monitoring efforts, technical analysis, and field site works that contribute to these reports, as well as the report preparation and production is \$1,574,873.73.





